Tampereen yliopisto

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PRICING AND PROFITABILITY OF GLOBAL MAINTENANCE SERVICE

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ABSTRACT

Rasmus Ekman: Pricing and profitability of global maintenance service
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Nowadays, very few of the machine manufacturers offer only machines to the customer but rather tries to offer different sorts of services to them as spare parts and maintenance. Furthermore, the literature has examined the shift of machine manufacturers to service providers and has given suggestions on management of the servitization. However, literature does not include that much research about the pricing of machine manufacturers' service business. Thus, many manufacturers use only cost-based pricing to their maintenance work and do not take the customer perceived value into account. In addition to this, the global environment makes the pricing situation even more complex because different markets have different characteristics that have an impact on pricing. Therefore, the study brings a new viewpoint to the literature of the manufacturers' service business by adding a pricing point of view to it. Furthermore, the study expands the literature on the value-based pricing and pricing process towards the industrial service business.

This thesis is based on the case study, which is done to the large global machine manufacturer's maintenance pricing, which does not include the maintenance contracts. The idea of the thesis was to investigate how to systematize the pricing of the hourly-based maintenance work by analyzing the pricing situation with the pricing process provided by literature and building the pricing model, which takes all the related factors into account. The topic was approached by creating a pre-understanding of the literature and the case company. The actual empirical study included both quantitative and qualitative analyses in terms of the theory given by the literature.

The study finds out that the market characteristics and the pricing determinants, which are customer perceived value and costs, are the main factors, which affect the selection of the pricing model. Market characteristics as competition and customer characteristics have an impact on the objectives of pricing and pricing strategies, which together define the business model. The business model, in turn, defines how the manufacturer wants to pursue the whole maintenance business, which affects the price structure. Although that exact customer perceived value is difficult to define, this can be used to form the pricing structure, which depends on the complexity of the work and urgency of the need. In addition, the costs determine how much the manufacturer has to get from the customer at least, so it has an impact on the pricing policy.

The pricing model should lead to the desired direction so that the manufacturer can obtain their objectives. The pricing structure should be based on different works rather than different customers and should have different price levels for preventive and corrective maintenance as the corrective maintenance generates more value to the customer. In addition, the structure should have higher prices for urgent work and overtime because the customer values those when they have a need. Although the pricing model is value-based, it can use the gross margin to reflect the value differences. Furthermore, the model should work as a framework for local units and allow discounts for good reasons, so that the prices are based on local needs and have the flexibility to obtain long-term profitability.

Keywords: Manufacturers' service business, Maintenance business, Field service, On-call service, Pricing, Pricing model, Value-based pricing, global pricing

TIIVISTELMÄ

Rasmus Ekman: Globaalien huoltopalveluiden hinnoittelu ja kannattavuus
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Nykyään hyvin harva laitevalmistaja tarjoaa asiakkailleen vain tuotteen, vaan pyrkii tarjoamaan tämän lisäksi tuotteilleen erilaisia palveluita kuten varaosia ja huoltoja. Tämän lisäksi myös kirjallisuus on tarkastellut laitevalmistajien siirtymistä tuotteista palveluiden tarjoajaksi ja antanut paljon ehdotuksia, miten palvelullistamista pitäisi viedä eteenpäin. Laitevalmistajien palveluiden hinnoittelua ei ole kuitenkaan tutkittu läheskään yhtä paljon. Monet laitevalmistajat käyttävätkin huoltotöiden hinnoittelussa useasti kustannusperusteista tuntihintaa ja eivät ota asiakkaan kokemaa arvoa huomioon. Tämän lisäksi globaali toimintaympäristö tekee hinnoittelusta entistäkin haastavampaa, sillä hinnoitteluun vaikuttavat tekijä vaihtelevat alueittain. Täten tutkimus tuo uusia näkökulmia laitevalmistajien palveluliiketoiminnan kirjallisuuteen lisäämällä siihen hinnoittelun näkökulman. Tämän lisäksi tutkimus laajentaa hinnoitteluprosessien ja arvoperusteisen hinnoittelun kirjallisuutta teollisen palveluliiketoiminnan suuntaan.

Diplomityö perustui tapaustutkimukseen, joka käsittelee suuren globaalin yrityksen huoltotyön hinnoittelua, joka ei perustu huoltosopimuksiin. Työn ideana oli tutkia, miten tuntiperusteisen tuntityön hinnoittelua voidaan systematisoida analysoimalla hinnoittelutilannetta ja luomalla hinnoittelumalli kirjallisuuden tuoman hinnoitteluprosessin avulla, joka ottaa kaikki siihen liittyvät tekijät huomioon. Aihetta lähestyttiin ensin luomalla esiymmärrys kirjallisuudesta sekä kohdeyrityksestä. Itse empiirinen tutkimus sisälsi sekä määrällisen että laadullisen datan analysointia kirjallisuuden antaman teorian valossa.

Tutkimus osoitti, että markkinoiden ominaispiirteet sekä hinnoittelutekijät, kuten asiakkaan kokema arvo sekä kustannukset, ovat päätekijät, jotka vaikuttavat soveltuvan hinnoittelumallin valintaan. Markkinoiden ominaispiirteet, kuten kilpailu sekä asiakkaiden ominaispiirteet, vaikuttavat hinnoittelun tavoitteisiin sekä hinnoittelustrategioihin, jotka yhdessä määrittävät liiketoimintamallin. Liiketoimintamalli puolestaan määrittää, miten valmistaja haluaa harjoittaa koko ylläpitoliiketoimintaa, joka vaikuttaa hinnoittelustruktuuriin. Vaikka tarkkaa asiakkaan kokemaa arvoa on vaikea määrittää, sitä voidaan käyttää hyödyksi hinnoittelustruktuurin laatimisessa, joka riippuu työn monimutkaisuudesta sekä kiireellisyydestä. Lisäksi kustannukset määrittävät, kuinka paljon valmistajan on vähintään saatava asiakkaalta, joten se vaikuttaa hinnoittelupolitiikkaan.

Hinnoittelumalli tulee johtaa toivottuun suuntaan niin, että valmistaja voi saavuttaa tavoitteensa. Hinnoittelustruktuurin tulee perustua mieluummin erilaisiin töihin kuin erilaisiin asiakkaisiin ja sen tulee sisältää eri hinnat ennakoivalle sekä korjaavalle huoltotyölle, koska korjaava huoltotyö tuottaa enemmän arvoa asiakkaalle. Lisäksi hinnoittelustruktuurin tulee sisältää korkeammat hinnat kiireellisille töille sekä ylitöille, koska asiakas arvostaa niitä silloin, kun heillä on tarve. Vaikka hinnoittelumalli on arvoperusteinen, se voi käyttää bruttomarginaalia kuvantamaan arvoeroja. Lisäksi mallin tulee toimia viitekehyksenä paikallisille yksiköille ja sallia hinnanalennuksia hyvistä syistä, jotta hinnat perustuvat paikalliseen tarpeeseen ja sisältää liikkumavaraa, jotta pitkän aikavälin tavoitteet voidaan saavuttaa.

Avainsanat: Laitevalmistajien palveluliiketoiminta, huoltoliiketoiminta, kenttäpalvelu, päivystyspalvelu, hinnoittelu, hinnoittelumalli, arvoperusteinen hinnoittelu, globaali hinnoittelu

PREFACE

The Master thesis was always be one thing to stress out at the time of my study at the University. The main reasons for it were that I did not see that I have any talent for writing and the reading does not belong to my favorite hobbies. However, I think the other four years of studies in University have prepared myself to the thesis and after the thesis, I can be proud of myself because I did it even though it sound almost impossible a few years ago.

The biggest thanks belong to the case company and especially to the central pricing team who offered the topic to me and who supported the thesis project in the beginning to the end. I appreciated that they gave good comments from the thesis and spent their time discussing the work. In addition to this, I am very thankful for all the interviewees who participate in interviews even though the time was very busy for many of them. All I can do is praise the attitude of the target company towards the students as the employees really listen to our thoughts and encourage to keep going.

In addition, I want to thank Professor Teemu Laine and other supervisor from the university Tuomas Korhonen very much for first being my supervisors but also for the support and comments at regular intervals. I felt that the threshold to approach them was never too high, which is very important in my opinion. In addition, I am very thankful for the comment and short discussion sessions with them, which definitely help me to improve the thesis to this level.

Furthermore, I want to thank all the friends of mine with the support and the share of their experiences of the thesis. In addition, I want to thank my girlfriend for encouragement and understanding that I need industrial peace at home. This thesis was the end of a very long journey as it represents the end of my studies from all way from elementary school to high school and to the university. However, even though the school is ending, the learning will continue for the rest of my life.

Tampere, 20.02.2020

Rasmus Ekman

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LIST OF SYMBOLS AND ABBREVIATIONS

B2B	Business to business
B2C	Business to consumer
CVC-analysis	Cost volume profit analysis
ERP-system	Enterprise resource planning system
OEM	Original equipment manufacturer

1. INTRODUCTION

1.1 Motivation of the study

Recently, manufacturers' service business has become more common in the machine industry because of the benefits that it brings to machine manufacturers. A few of the most common services that machine manufacturers can offer are spare parts, repairs, and maintenance. The benefits of manufacturers' service business could be divided into three main categories, which are financial, marketing and strategic benefits (Gebauer et al. 2005). These financial benefits can also further divided into substantial revenues, higher profit margins, and more stable cash flow. Other benefits that manufacturers' service business can bring is, for example, the better ability to sell products, the balance of economic cycles and better service quality (Brax 2005; Raddats et al. 2016).

One dimension of financial performance is profitability, which in general measures how much revenues are in relation to costs (Suomala et al. 2011, p. 39). In the manufacturers' service business, the revenue is typically the price that the service provider will receive from the customer. Hinterhuber and Liozu (2012) found out that even a one percent price increase could increase profitability up to 20 percent. In this light pricing has a very straight impact on profitability also in the manufacturers' service business. Notwithstanding, the literature has not considered the pricing of the manufacturers' services that much. In addition, any kind of marketing action should affect pricing so pricing decisions are not independent of marketing actions (Lancioni 2005). Therefore, the pricing of the manufacturer's service business is an important field to study.

Quite often pricing is seen as a way to maximize the company's profits, which have come from economic literature and the balance of the supply and the demand (Guerreiro & Amaral 2018). Furthermore, many companies use almost solely cost-based pricing methods like cost-plus pricing (Shipley & Jobber 2001; Nagle 2011). However, marketing literature does not accept this form of pricing but rather thinks that customer perceived value about the offering describes the customer willingness to pay and the difference of value should be reflected in the price (Guerreiro & Amaral 2018). However, the value-based view of pricing is complex since different customers value offerings differently based on different factors. (Forbis & Mehta 1981) In addition, the pricing of services

brings more challenges to the pricing situation because of their intangible nature (Berry & Yadav 1996). Thus, it brings the challenge to determine the actual value of the service to the customer (Anderson & Narus 1995). Therefore, there is a need to study how the pricing processes provided by literature can be used to the pricing of services and what are the special characteristics it brings out.

Setting prices to international markets make the pricing situation even more complex than in domestic markets because pricing should take different factors in different regions into account (Lancioni 2005). Because of this, the one pricing strategy that works well in the one market area may not be suitable in another market area (Hinterhuber 2004). Hence, the companies need to adapt the global pricing structures to heterogenic international markets (Cavusgil 1996). In addition, local units can modify global accounting practices to their particular needs and habits. (Cruz et al. 2011) Therefore, the pricing model needs to accept some level of dynamics across the global environment so the global environment might have impact on the forming of the pricing model.

The empirical part of this thesis is done to the globally operating Finnish machine manufacturer company. The company is part of a larger company whose historical roots are very long even though the actual company was formed at the turn of the millennium. The company operates in the B2B (business-to-business) market providing different kinds of machines for different purposes. Some of the machines are quite common in the industry, but others are much more complex, which might require projects and different competencies.

In addition to the machines, the company offers different kinds of services to all of their machines. The company has a separate business unit for a service business, which provides different kinds of service offerings globally. The company provides different kinds of service contracts, technical support, spare parts, maintenance, modifications, and training services to the machines. The service business is divided into three different profit centers, which are the spare parts, the on-call business, and the service contracts. However, even that spare parts have their own separate profit center, spare part are also sold under on-call business when those are needed for repairing customer machines.

Generally, the company does not offer services directly to the customer but rather use their own frontline units, which are responsible for sales in their own geographical area and provides services to the customers. Almost all of the frontlines use same ERP (enterprise resource planning) system than the central organization. In the case of spare

parts, the data of their sales operations are transparent as every item has its own item code and price, which comes from the central organization. On the work side, the case is slightly different as every frontline has its own maintenance staff and they price their maintenance work themselves. In addition, the company's ERP system includes different codes for different kinds of service work but each frontline has own habits for using those. This has led to the situation where data of this business are scattered and because of that, it is very hard to monitor pricing from the central organization. Furthermore, the company has faced the problem to keep maintenance prices up to date while price levels in the market are rising.

This thesis will concentrate on the pricing of so-called on-call services, which means maintenance services, which are not based on full-service contract and which are usually priced based on hours. The main challenges of the pricing of these services are the non-systematic processes and the challenges of profitability in some frontlines. In addition, the global context brings challenges as different markets have different characteristics. In many markets, small local competitors provide basic services to the company's equipment at a very low price, which brings the price pressure from the customer. Furthermore, the challenge lies in the ability to differentiate the company from local and global competitors through value because the company's prices are mainly based on costs.

1.2 Objectives

The objective of this thesis is to investigate the pricing of global machine manufacturers' maintenance business. The research questions of the thesis are:

1. *Which factors affect the selection of a suitable pricing model for global machine maintenance service?*
2. *Which kind of pricing model can be utilized with global pricing of field service maintenance work?*

The study should expand the literature of the pricing process and value-based pricing to industrial services by examining how these are suitable for pricing those. In addition, this study investigates pricing in global perspectives, which might bring new aspects to the pricing processes. Furthermore, the study brings a new viewpoint to the literature of manufacturers' service business by concentrating on how pricing of industrial services can increase the profitability of those.

The idea of the thesis is to investigate pricing particular just in on-call maintenance work and therefore the pricing of full-service contracts is not taken into account. The full-service contract pricing is not studied because the case company has its own practices and team to contracts. However, the interaction between on-call business and service contract needs to be taken into account to consider the maintenance business as a whole. Because of this, the thesis also takes a stand at the price level of the contract business.

The objective of this thesis from a company point of view is to develop a pricing model, which can be used for on-call maintenance work in a global environment and which leads pricing to be more systematic in this manner. The idea is not to make one pricing model that fits for all but rather to provide a global framework, which can be utilized to some extent across all markets. Therefore, the model should also lead to better data of this business for future purposes. In addition to this, the model should somehow take the customer perceived value into account, which helps the company to stand out from its competitors.

1.3 Implementation

The thesis process begins by exploring the literature mainly of machine manufacturers' service business and pricing. The preliminary review of the literature gives the basic knowledge and frameworks on how the company could price its maintenance works. The next step after the first view of literature is to gather quantitative data from the company side and seek the factors that have an impact on the prices and analyze the current state of the frontlines. The other purpose of the qualitative data is to find the most interesting object for the interviews and find the most interesting topics to discuss. When the object and subject of the interviews are decided, the next step is to gather data from interviews from different frontlines and from the central organization. With the quantitative and qualitative data, it is possible to start to process the actual pricing model. The forming of the pricing model utilizes the pricing process provided by literature, which takes all the related factors into account. In order to ensure that the model can be used to the actual purpose, the communication of the ideas with the central pricing team is also continuing during the whole process. In the end, the thesis comes back from the emic to the etic perspective and answer the research questions.

The actual process of the thesis begins at the beginning of September in 2019. The idea was to read and build the theory to the point where the actor has a basic understanding

of the underlying theory and how to use it. The next step was the quantitative data gathering and analysis, which starts at the beginning of October. After the analysis at the end of October, the feedback is asked from the case company, and small corrections were made. The interview questions were made during the theory building and quantitative analysis. The interviews started at the end of October and last to the beginning of December. The actual interviewees were also selected mainly in this time period to the point where new interviewees are not able to give a new viewpoint to the issue anymore. The qualitative analysis is then started at the beginning of December so that the first version of the analysis and the pricing model was ready in the middle of December. However, the analysis and theory were further refined so that the thesis with the answer to the research question was ready in February.

Research plan and guidance agreement	*September 2019*
Preliminary study of literature	*September – October*
Quantitative data collection and analysis	*October 2019*
Qualitative data collection (interviews)	*November – December*
Analyzing data with literature	*December 2019*
Building pricing model	*December 2019*
Finalizing theoretical background	*December – January*
Answering to the research question and finalize the thesis	*January – February*

1.4 Structure

This thesis will start with the literature review. The literature review begins from the literature of pricing machine manufacturers' service business, which includes the motivation of servitization and the role of management accounting in manufacturers' service business. In addition, the end of this chapter takes the global context of management accounting and pricing into account. Therefore, chapter two provides the domain of the study. The second part of the literature review is the literature on pricing. The literature starts with the strategic perspective of the pricing, which leads to the pricing process. The pricing process includes a couple of frameworks from the literature, which includes objectives, determinants, strategies, methods, and implementation. At the end of the pricing chapter, we approach to more detailed topics of the thesis by the literature of pricing of service business and conclude the theory to the one framework, which can be used as the basis of the analysis.

The next section after the literature review is the business overview and research methodology, which includes the reasoning of the methods, which is used, and how the actual empirical study is done. The fifth chapter is for analysis of the gathered empirical quantitative and qualitative data for building the model. The sixth section is for the findings with the presentation of the actual pricing model and for the discussion, which tells how this thesis is significant in the light of research. The last section is the conclusion, which consists of the answer to the research questions, the limitations of the study and recommendations for further study.

2. MACHINE MANUFACTURERS' SERVICE BUSINESS

Durable machines always require some kind of services during its life cycle when those go through purchasing, assembly, use, updates to decommission. In addition to purchase price, this creates the cost of ownership to the machine, which includes, for example, prices of spare parts, repairs, and maintenance. (Oliva & Kallenberg 2003) Thus, the purchase of the product usually leads to consuming services (Brax 2005). This lifecycle of the machines represents the potential of manufacturers' service business.

The purpose of this chapter is to give an understanding of the manufacturers' service business so that it can be used in the analysis. The motivation and the challenges of the services give a basic understanding of why and how the company could serve its customers, which relate to the objectives of the pricing model. In addition, the literature on the challenges of providing services and global context can help to analyze how market characteristics affect pricing and the implementation of the prices. The literature of management accounting, in turn, helps to analyze the situation in the quantitative analysis but also help to determine how the company should use, for example, the cost information in the pricing model.

2.1 Motivation and challenges

There are usually several motivational factors, why machine manufacturers want to offer services to their customers. These motivations could be divided into financial, marketing and strategic factors (Gebauer et al. 2005). Gebauer et al. (2005) divided financial motivations into substantial revenues, higher profit margins, and more stable cash flow. In addition, Raddats et al. (2016) noted that revenues are one financial motivator but also cost savings. In turn, marketing motivators could be, for example, better service quality (Raddats et al. 2016) but also longer customer relationships, new growth possibilities in the mature markets, better ability to meet the demand, and it could also make product sales easier (Brax 2005). Furthermore, Malleret (2006) noted that a longer relationship is one of the key motivators of manufacturers' service business and the profitability of the customer will increase over time. According to this, some marketing motivators could also lead to financial motivators. Some other marketing motivators that Malleret (2006) noted were new information on customer needs, differentiation through services, and

image spreading through services. Strategic motivations, in turn, could include motivations, such as decreasing risk of demand (Raddats et al. 2016) and a better balance of economic cycles (Brax 2005).

Although there are substantial different motivators that manufacturers can achieve through services, there have been also several challenges to reach those objectives. Brax (2005) divided factors of these challenges to the five different categories, which were marketing, production, product design, communication and relationship challenges. On the marketing side, manufacturers have to motivate the customer to co-production of services so that it meets the customer needs (Brax 2005). Neu and Brown (2005), for example, noted that services have to be flexible for answering the complex needs of the customer, as one service does not necessarily fulfill every customers' needs. On the production side, manufacturers need to have useful integrative information systems and information management practices (Brax 2005). Furthermore, Reinartz and Ulaga (2008) note that information, which is needed for creating services needs to be collected outside the organization, which takes time and resources. In addition, Brax (2005) noted that the delivery of services is complex because it requires customer's full attention and errors of waste capacity and quality have an important impact on service productivity. Product-design challenges based on that services must always be adapted to different cultures (Brax 2005). Furthermore, Oliva and Kallenberg (2003) noted that one major challenge for manufacturers in the service business is building a global service infrastructure, which can meet the local requirements of service. The challenge of this is that a distributed service network requires a major investment, capabilities, and the need to decide the balance between standardization and customization for local end-users (Oliva & Kallenberg 2003). Communication challenges come from the fact that services require continuous communication with the customer for keeping them motivated. Lastly, relationship challenges based on product support and surrounding business context, which are important factors of customer decision making. (Brax 2005)

Neely (2008) noted that manufacturers often face a challenge to change their mindset about services. Gebauer et al. (2005) noted three different factors why some manufacturers have not been so interested to develop industrial services, which were overemphasis of concrete properties, the invisibility of economic benefits and risk aversion. In addition, Oliva and Kallenberg (2003) noted that the invisibility of economic benefits have impact on the motivation of providing service but they found that also service exclusion of the core business and unsuccessful service strategy are main problems when provid-

ing services. However, literature offers also some suggestions to go over these challenges and problems. Gebauer et al. (2005) suggest that manufacturers should increase service awareness, accepting the risk caused from industrial services, and believing the economic potential of it. Laine et al. (2012), in turn, emphasize the role of management accounting in planning and monitoring of manufacturers' service business to form objectives that are more realistic.

Because manufacturers have had many challenges to implementing industrial services successfully, literature has also developed many suggestions and guidance to implement the industrial services in a more profitable way. Many researchers have emphasized that the best way to achieve superior performance in manufacturer services is to implement the change toward services slowly and systematically (Oliva & Kallenberg 2003; Brax 2005; Reinartz & Ulaga 2008). Gebauer (2005) suggest that manufacturers should establish a market-oriented service development process for offering services which customer really needs. Then the manufacturer should pay attention to the value that the customer perceives from the service. The next steps are a start of relationship marketing, defining the service strategy, the establishment of a separate service organization and creating a service culture. (Gebauer et al. 2005) Contrariwise, Neu and Brown (2005) argued that service organization should be integrated with product organization. Oliva and Kallenberg (2003), in turn, suggest to follow the systematic framework which begins of consolidating product-related services to entering installed base market to expanding relationship or process-based services and finally to taking over the end-users actions. Reinartz and Ulaga (2008), in turn, present a framework with four steps, which are understanding that the company is a service company, industrialize the back-office services, develop sales force, which understand the service and finally focus of the customer processes.

2.2 Management accounting in manufacturers' service business

We have revealed that manufacturers' service business can bring different kinds of benefits to machine manufacturers and especially financial benefits. Potential of the manufacturers' service business needs to be defined case by case so that the firm has an understanding of the dynamics behind the situation (Lindholm et al. 2017). However, manufacturers usually have problems to define the cost of their services (Anderson & Narus 1995; Mathieu 2001). This occurs usually because the cost of services are usually

fixed and indirect rather than variable and direct (Mathieu 2001). For detecting and managing these the cost and the financial benefits of manufacturers' service business, we can use management accounting.

2.2.1 Management accounting in general

The one definition of management accounting is: "The techniques used to collect, process, and present financial and quantitative data within an organization to help effective performance measurement, cost control, planning, pricing, and decision making to take place." (Law 2016) Therefore, the idea of management accounting is to provide accounting information for supporting decision making in the organization (Suomala et al. 2011, s. 9). Hall (2010), in turn, argues, that management accounting should not support the actual decision-making but rather provide insight into the environment to the managers, which helps them to prepare for decision-making situations. Similarly, Burchell et al. (1980) argue that the purpose of management accounting is to make decision making easier rather than affect the decision making process.

Burchell et al. (1980) built a framework for the role of accounting information in decision-making. The framework has four roles for accounting information, depending on the level of uncertainty of the objectives and effects in the specific situation. In the case where the uncertainty of both objectives and effects are low, management accounting could play the role of the answer machine but in the case where these uncertainties are high, the role is more to rationalize the situation.

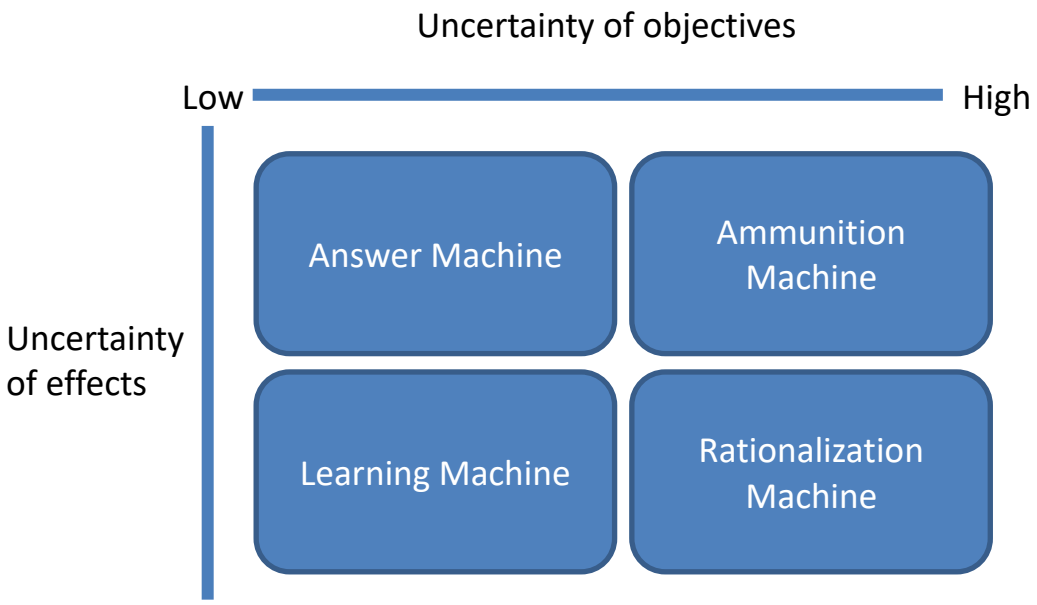

Figure 1. Role of accounting information modified from (Burchell et al. 1980)

Hall (2010) also emphasized the use of accounting information as a part of the wider information. The analysis of a new service offering, for example, may require information from different sources, such as from product or other service divisions (Lindholm et al. 2017). However, management accounting is quite one-sided in many companies, which can lead, for example, to sub-optimizing local performance without paying attention to global performance (Dent 1996). In addition, some of the customers could appreciate that the company offers some products or services that are not individually profitable but which drive sales of the more profitable products or services. As a result, management accounting should include also non-monetary measures. (Suomala et al. 2011, s. 15) Although management accounting has a unique feature to change operative activities to one financial dimension, the most significant benefits can be achieved only including other sources of information to it (Hall 2010).

The third way of use management accounting in decision-making is to use it as a means of communication because it facilitates the discussion of the founding and the reasons for it. (Hall 2010) Laine et al. (2016) studied the concept of boundary subject and boundary object and found out that boundary objects, such as cost calculations, might have a role in visualizing and cause discussion among different stakeholders in an early stage. This discussion will then lead to issues that need to be further developed in a certain boundary object like cost calculation, which then includes more detailed dynamics of business impact. (Laine et al. 2016)

2.2.2 Management accounting in manufacturers' service business

Management accounting can facilitate the manufacturers' service business by collecting and consoling the scattered data from different parts of the organizations (Lindholm et al. 2017). Laine et al. (2012) argued that evaluating the service process by the light of management accounting needs four aspects to consider. At first, the company has to evaluate how to utilize the accounting info by the light of the Burchell et al. (1980) framework. Secondly, the company needs to decide what the accounting objects are. These accounting objects could be, for example, company, customer, product or something else. Third, the company needs to decide what the objectives of management accounting. Accounting objectives could be, for example, costs, profit or revenues. Last aspect that companies need to consider is whether the calculation is done before or after the actual decision. (Laine et al. 2012)

Management accounting also helps to evaluate the profitability of different service offering in different markets and locations. Neely (2008) found out that manufacturers who provide services tend to generate more revenue but relatively less profit. This is due to the higher cost of labor, working capital and net assets, which the manufacturers are not capable to cover (Neely 2008). However, Malleret (2006) note that awareness of costs facilitate the management of services and helps to got value out from them. In addition, management accounting may help companies to see the potential of different services in different markets and thus helps the company to prioritize different options. (Lindholm et al. 2017)

Lindholm et al. (2017) argued that the interaction of services and products should be taken into account in management control and in management accounting in manufacturers' service business. As a result, they suggest to use installed base information for illustrating the potential of the industrial services, which can help companies to segment the market and pay attention the potential customers (Lindholm et al. 2017). Thus, the installed base information management could increase the performance and revenue of field service providers (Tucci et al. 2013). In addition, Wise and Baumgartner (1999) think that machine manufacturers' service business potential can be assessed with info of the installed base, money that the customer spends during the machine lifecycle in relation to the price of the machine, and profitability of services in relation to the product.

Lindholm et al. (2017) noted that manufacturers need measures that lead their operations in the same direction as the market. Wise and Baumgartner (1999) suggest that manufacturers' service business may require a new measure like profit per installed unit, the share of customer total service spending and customer return over the machine life cycle. Furthermore, Rabetino et al. (2015) suggest that manufacturers should pay attention to customer cost and profits over the long-time period if they provide services through the machines life cycle. In this context, Wise and Baumgartner (1999) suggest that manufacturers should define the value chain from the customer point of view and define all the activities that they need at that time. However, if these services are embedded, it brings challenges to management accounting (Rabetino et al. 2015).

Malleret (2006) noticed also other reasons for cost calculations than just setting the margin to services. Cost information is very useful for sales representatives as it brings awareness of the cost so that they can define the sales pitches to use with the customer (Malleret 2006). In addition, the accounting information can be used, for example, to managing the risk in long-term agreements (Neely 2008). Second, cost information could

provide information to the customer and explain the price, which should lead to an increased willingness to pay according to their interviews (Malleret 2006). However, if we assess this argument by the light of value-based pricing, which we are going to consider in the next chapter, the costs will not relate to customer perceived value and therefore willingness to pay.

2.3 Global context

When companies operate in the global context, they usually cannot just assume that all customers have the same needs globally. Furthermore, global management control practices in all over the world would not suit to every local unit. As a result, Lindholm et al. (2017) suggest that the companies should not lead their local units only with figures, which are taken directly from the system if the local units do not have similar responsibilities and accounting practices (Lindholm et al. 2017). Dossi and Patelli (2008) investigate the performance measurement system, which has a substantial role in controlling local subsidiaries in the global business environment. They found out that involving subsidiaries to design of performance measurement systems lead them to utilize it to support implementations of the local strategic decisions (Dossi & Patelli 2008).

Global context also brings challenges to manufacturers' service business, as managers need to consider the level of standardization of the service offer versus the customization for local customer need (Oliva & Kallenberg 2003). Similarly, Lindholm et al. (2017) noted the challenge of maintaining the balance between global and local perspectives in terms of business structures, accounting practices, and key performance indicators. Dent (1996), in turn, studied the challenges of using management accounting in a global environment and found five challenges. The first challenge is to take multiple perspectives like different functions, areas, and offerings into account. The second challenge was to use a formal system to take informal interactions of organizations into account. Third, broader competition analysis is required in the global market, because companies might have also local competitors. Fourth, the value of intangible assets should be taken somehow into account. Lastly, management accounting has to prevent fragmentation of the firm by clarifying strategic goals and rewarding achievement, which support the whole organization. (Dent 1996)

Kucza and Gebauer (2011) stated that the global service infrastructure helps companies to meet the needs of local markets and customers, which leads to customer-facing or-

ganizational units. However, they note that global organization infrastructure, independence of the local unit, service organization proximity to the customer, functions which are needed to deliver services and cultural aspects have an impact on the decision of global service infrastructure (Kucza & Gebauer 2011). Cruz et al. (2011) argued that global operating companies could have a global management control system and they can press local units to use this. However, local units should have the possibility to assess how they can utilize it and modify this control system to their specific needs if necessary. In this way, companies can achieve both local and global level objectives. (Cruz et al. 2011) In addition to this, Dossi and Patelli (2008) argued that subsidiaries benefit from a performance measure system implemented by the headquarters when the measuring perspective is broad, global pressure is high and when they differentiate it according to subsidiaries' decisions. However, managing the local operations with a performance measure system by headquarter seems to decrease the economic performance. (Dossi & Patelli 2008)

Lindholm et al. (2017) also highlighted the role of interaction of multidimensional organization structure in the management accounting in manufacturers' service business. In their research, they found several challenges of management accounting and control, which were the complexity of global operations, differences in management accounting practices and lack of accounting information in different viewpoints. They concluded that analyzing industrial service potential with management accounting might require information on different product and service units from different parts of the global structure. In addition, global operating service providers should establish financial information and performance indicators, which are suitable to different markets, because circumstances differ in the different local contexts. Furthermore, they highlighted the need for learning from the different local context with management accounting information for seeking profitability increases. (Lindholm et al. 2017)

Global context brings challenges also to pricing, as international pricing strategy has to consider different markets, their culture, language, economic, legal, and political differences (Lancioni 2005). Because of this, pricing structures that were done for the single market need to be adapted to the heterogeneity of international markets (Cavusgil 1996). Tzokas (2000) investigates the pricing in export markets and highlighted the need to be aware of customer needs and competition in different markets. In addition, Hinterhuber (2004) noted that global companies do not usually use one global pricing strategy in all regions, because the elements of the pricing decisions vary in different regions. Thus,

the great pricing strategy in one area may not be successful in another area. (Hinterhuber 2004)

Cavusgil (1996) studied different factors that have an impact on the prices in foreign markets. At first, the nature of the industry in term of competition and entry barriers define how flexible company can charge from the customer. Second, the location of the production facility affects the cost of the offering. (Cavusgil 1996) However, in the case of services, the “production” of services is located usually in the same place as markets. Third, the distribution system has an impact on prices as external distribution decreases the control of prices. Fourth, the location of the foreign market affect prices as, for example, tropic weather may require a different kind of climate requirements for the market. Lastly, foreign currency differentials have an impact on prices as exchange rates differ every day. In addition, the company should have different strategies for different periods of exchange rates. (Cavusgil 1996)

Furthermore, Cavusgil (1996) studied the price management in the global organization. The advantages of centralized pricing is the uniformity of prices across the globe, competition strategies for global competitors, forecasting of global annual revenue and brand positioning in the markets through the pricing. Advantages for decentralized pricing are, in turn, quick response to the changes in the market or ability to follow the market leader. In addition, decentralized pricing may be needed if end-users in the market are relatively poor, the market has different local cost or economic conditions or it is needed to maintain capacity utilization. However, companies do not need to use only one of these as they can set global principles for pricing, but allow some amount of adjustment for pricing, for example, through discount rates. (Cavusgil 1996)

3. PRICING

The idea of the thesis is to receive the value of the manufacturer's service business by better pricing. In the economic literature, researchers have analytically demonstrated that an optimal price is a point where the marginal revenue equals the marginal cost. However, marketing literature has criticized this approach and argued that a value-based approach is the best way to reach the highest profits. (Guerreiro & Amaral 2018) However, pricing has a direct and significant effect on company profitability (Hinterhuber & Liozu 2012) and it is the only tool in the marketing mix that brings profits to the company (Shipley & Jobber 2001). In addition to this, pricing is the most flexible tool in the marketing mix as it is usually fast to change (Cavusgil 1996). Hinterhuber (2016) even argued that pricing is the most important driver of profit but it is very often overlooked when companies try to seek profits. Wihinen (2012) argues that: "Pricing involves the determination of pricing strategies, tactics and policies that are implemented in order to achieve specific pricing objectives."

The purpose of this chapter is to introduce how pricing can be used as a strategic purpose. The chapter gives suggestions how the pricing should be used and give a framework how to price the offerings so that is based on the value. These frameworks can be used for determining the actual pricing model for the company in the analysis by following the steps like objectives, determinants, and implementation that literature provides. In addition, the pricing of service business chapter provide some price strategies, which is needed for setting the structure to the pricing model but also for tone up the objectives of the pricing model. Furthermore, this chapter helps to analyze the objectives of the pricing model through the interaction of on-call business and full-service contracts.

3.1 Strategic pricing

Pricing is not just an independent function in the organization because every different factor of a marketing process affects pricing (Lancioni 2005). Indounas (2015) argued that pricing decisions should not be treated as a short-term tool to gain profit but rather examining their long-term effects. In addition, Tzokas (2000) argued that pricing decisions should be treated equally than other strategic decisions and planning and monitoring the price should be done on a continuous basis. Strategic pricing is a proactive behavior where a company answers to the competitors' moves but also make own initiatives that are beneficial to themselves (Indounas 2015). Nagle (2011), in turn, argued

that: “The purpose of strategic pricing is to price more profitably by capturing more value, not necessarily by making more sales.”

Strategic pricing is much more than just managing the price levels. Nagle (2011) highlighted that all successful pricing strategies include the three important principles, which were, value-based, proactive and profit-driven. Value-based in this context means that price differences and changes should always base on the customer perceived value. Proactive, in turn, means that the company has prepared to answer to different market changes like price cuts to the way that they have defined. Lastly, profitable driven means that evaluation of pricing management based on profits rather than revenues. (Nagle 2011)

For understanding the wider perspective of the strategic pricing, Nagle (2011) build the strategic pricing pyramid, which includes the five levels. The pyramid has been built so that the upper level of the pyramid requires lower parts for a successful pricing strategy. The model starts with value creation, which means the ability to create the offering, which makes value to the customer. Even though the customer noticed some features in the offering, which differentiate the offering from the competitor’s offering, it does not mean that it makes value to the customer. Therefore, development of the new offering should always start from the customer need and values, which defines the target price. When the target price is set, company could check are they able to achieve this value with the costs that are below the price. (Nagle 2011)

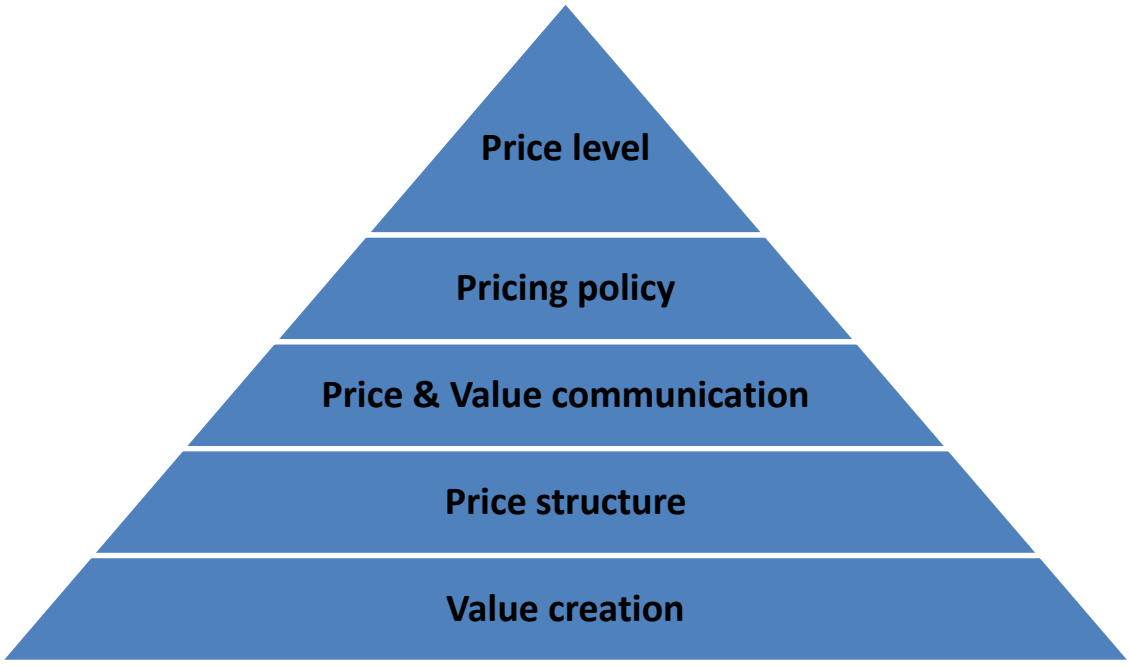

Figure 2. Strategic pricing pyramid modified from (Nagle 2011)

Dutta et al. (2003) divided pricing capabilities to value creation and value appropriation capabilities. The value creation capabilities mean exactly the first floor in the strategic pyramid. Value appropriation capabilities, in turn, are the capabilities that help companies to set prices more flexible, which help them to answer competitors' action. In addition, these capabilities help them to set the prices more accurate, which help them to set price the level of customer willingness to pay. (Dutta et al. 2003) In this light, these value appropriation capabilities will represent the upper floors of this pyramid.

The actual value that a customer perceives is not the value that is central in the pricing decision but rather the economic value. This total economic value takes other alternatives or competitors' offering into account so that it represent reference value and the difference value. This difference value can be divided monetary or psychological value, which is usually significant only in B2C (business to consumer) sector. Furthermore, it is important to note that differentiation values can be different to different customer segments. (Nagle 2011)

Pricing structure means the way that the company is charging the customer. The idea of the complex pricing structure is to provide different pricing in different customer segments. The idea of this is to reach a maximum price from each segment that is still reflecting the value so that the company takes higher profit from the customer who values offering more and accepts to take the lower price from the customer who does not value the offering that much. For creating an effective price structure, companies have to decide which features of the offering separately and which are bundled together. With bundling, companies can serve different segments with one bundled price. In addition, bundling enables to answer to the external factors without changing the actual price. However, if the cost of the bundled feature varies much, it may bring some problems. (Nagle 2011) In addition to bundling, companies could use, for example, differentiated pricing, competitive bidding, loss leader pricing or psychological pricing. Differentiated pricing, for example, means that companies set the price based on the different criteria, which could be, for example, size, the contribution of turnover, or geographical location so that prices are different in different segments. (Indounas 2009)

Price structures also include price metrics. Nagle (2011) argued that ideal price metrics should track the value what customer receives and the cost incurred to the company. In addition to this, metrics should be easy to measure and should be attractive in relation

to competitors and the experience of the value. Companies can also have several metrics in one offering, such as a fixed price and a price per usage. In addition, Nagle (2011) thinks that performance-based metrics are the ideal metrics for the price as it reflects the perceived value. Furthermore, it changes the operational risk to the supplier and therefore makes the sell the offering easier. However, performance-based metrics are not practical, as it requires plenty of information and trust. Companies could also use tie-ins as a metric so that the purchase of the core-offering leads to future revenue. (Nagle 2011) The manufacturer could, for example, sell the machine at a lower price when the customer accepts to purchase also the service contract.

The purpose of the price and value communication is to justify the price to the customer in terms of value that the customer will receive. The communication of the value could vary depending on the offering and the context of the purchase. In addition to this, Hinterhuber and Liozu (2012) noted that even though value-based pricing based on customer perceived value, it is important to communicate it to the customer so that the customer understands the value. Especially with a new innovative offering, the customer may not understand the actual value of the offering, which decreases their willingness to pay for it. This may require effecting marketing to communicate the value to the customer. (Nagle 2011) Furthermore, Hinterhuber & Liozu (2012) noted that value-based pricing is effective in highly competitive industries.

The pricing policies mean practices how companies change their price in the short term to achieve some other objectives. The idea of these price changes is not to affect the customer or competitors so that they will answer these changes, which will decrease the profit in the long term. Therefore, even the company offers a discount to the customer, it does not affect their willingness to pay so that they resist paying the normal price in the future. The last part of this strategic pyramid is the actual setting of the price, which is discussed in more detail in the next section. (Nagle 2011)

3.2 Pricing process for setting price

For developing a pricing plan, companies have to commit to a set of objectives, a course of action, operational strategy, and define the control process to make sure that management of the pricing process succeeds (Lancioni 2005). In literature, there are at least a few pricing process frameworks, which include different steps to achieve pricing, which consider all relevant factors. Shipley and Jobber (2001) formed six steps continuous pricing process called “pricing wheel.”

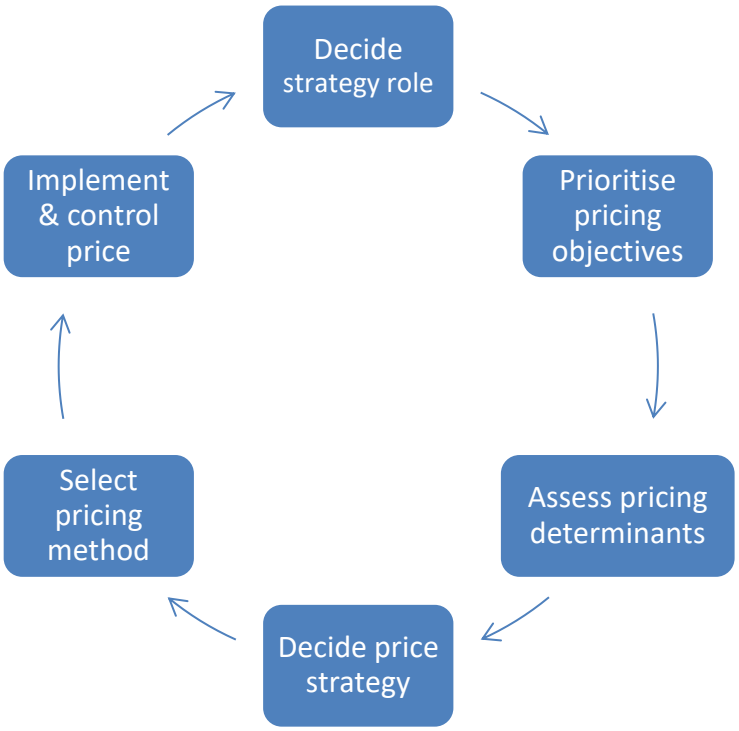

Figure 3. Pricing wheel modified from (Shipley and Jobber 2001)

This process starts with the well-defined role of the pricing by the light of marketing and the company overall strategy. Shipley and Jobber (2001) noted that pricing could play a prominent or supportive role in market strategy. The supporting role of pricing is typical in very customized and complex products where the customer appreciates productivity and total cost of ownership more than the actual purchasing price. The prominent role, in turn, means that companies' prices are visible and they try to communicate different factors of marketing through the price, such as superior quality. (Shipley & Jobber 2001)

After defining the role of pricing in marketing strategy, the process comes to pricing objectives. These objectives should prioritize, be on the line of company strategy and take environmental factors into account. Assess of the pricing determinant, in turn, means all factors, that should be taken into account in pricing decisions. The next step is to decide the price position strategy and the new product pricing strategy if the offering is new. After this company should decide the pricing method. However, Shipley and Jobber (2001) recommend to use a method that takes all of these generic pricing methods into account, so that it includes cost, competition and value analysis. The last part illustrates that pricing is not the one-time decision but rather a continuous process (Shipley & Jobber 2001).

The other pricing model framework in the literature is Hinterhuber's (2004) framework for value-based pricing. Even though this framework is named value-based, it does not mean that it does not take other elements like cost and competitors factors into account. This framework is slightly different as it has only four different elements: defining pricing objectives, analyzing key elements of pricing, selecting profitable price ranges and implementing price changes. (Hinterhuber 2004)

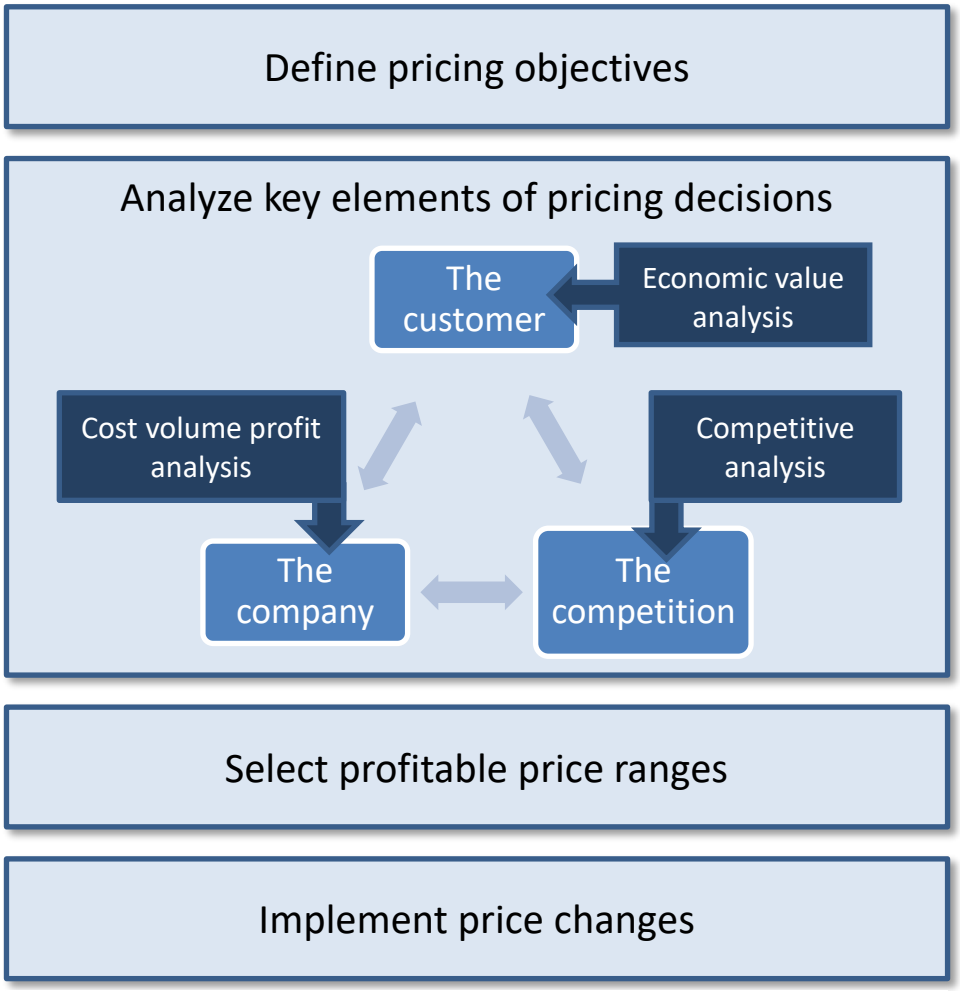

Figure 4. Framework of value based pricing modified from (Hinterhuber 2004)

The framework starts with the objectives, which should be based on the company's overall strategy (Hinterhuber 2004). Therefore, the beginning of this process is quite the same as Shipley's and Jobber's (2001) pricing wheel. The analysis of key elements of a pricing decision, in turn, has three different elements, which are customer, company, and competition. These three elements represent the determinant that should be taken into account for successful pricing. After analyzing the determinants this process suggests to

use a pricing method that takes these factors into account and implements the price changes. (Hinterhuber 2004)

In addition, Nagle (2011) introduced the three-step process for setting the price level, which includes definitions of the price window, setting the initial price and communicating prices to the markets. The first step is to make the price window with includes price floor and price ceiling for all the different segments. This price window should be based on the differentiation value and the cost. The next step is to set the price to the different segments by analyzing how much differentiation value the company can charge from the customer. This will depend on the price sensitivities of the customers and the other objectives that the company has. The last part of this model is to communicate new prices to the market so that customers perceived that prices are fair. (Nagle 2011) In principle, all of these pricing processes proceed to some extent the same way. These pricing processes are described side by side more detail next in this chapter.

3.2.1 Pricing objectives

The setting of the price level is an iterative and cross-functional process, which starts with pricing objectives (Nagle 2011). Pricing objectives should be the starting point in all pricing situations (Tzokas et al. 2000). As mentioned previously, the pricing objective is to realize the created value through value appropriation capabilities (Dutta et al. 2003). However, the objectives of pricing are not usually that simple but rather have different dimensions. For example, Diamantopoulos and Mathews (1994) argue that pricing objectives should be analyzed under three different dimensions, which are their content, desired level of attainment and related time horizon. The content means specific objectives that firm would like to achieve with pricing, which could be, for example, "…profits, survival, sales volume, sales revenue, market share, image creation, competitive parity or advantage, barriers to entry and perceived fairness." (Shipley & Jobber 2001). The desired level of attainment, in turn, means how companies want to achieve their objectives, do they seek maximum results or do they only try to achieve satisficing results like, for example, a five percent market share increase. Generally, it is very hard to make clear a split between those because many times companies' objectives are in some extend both. The third dimension is simply a separation of short term and long-term goals. (Diamantopoulos & Mathews 1994)

Shipley and Jobber (2001), in turn, divided pricing objectives into three different dimensions, which are objectives of revenues, objectives related to competition, and image-based objectives. Objectives that related to competitive related usually to maintaining

price parity with competitors, gain market share and prevent new entrants. Brand based objectives, in turn, relate usually to customer experiences that price is fair. In addition, they pointed out that objectives about revenues could be short term or long term. (Shipley & Jobber 2001) However, Diamantopoulos and Mathews (1994) noted that short term objectives were usually satisfaction oriented and long-term objectives more maximization oriented. This occurs because in the end every kind of objectives, which relate to market, customer or competitors are for achieving financial objectives in long-term (Diamantopoulos & Mathews 1994; Shipley & Jobber 2001).

Many managers could also try to seek market share through pricing because they believe that it will produce a greater profit. This was also the one myth that Hinterhuber (2016) noted in his research: “high market share = high profits.” Usually, when companies try to seek market share, they need to offer a price discount and thus decrease profitability. Nagle (2011) noted that price cuts are usually not a useful way to achieve sales objectives because competitors can usually answer those easily and thus it does not bring long-lasting benefits. They suggest that the objective of pricing is to find a combination of market share and margin, which maximizes long-term profitability (Nagle 2011).

3.2.2 Key determinants

Like other decision-making situations, also pricing decision-making needs extensive information. Sophisticated pricing practices always need some information on internal and external factors (Shipley & Jobber 2001; Lancioni 2005). Internal factors usually relate to the organization's cost and profit information like cost and ROI levels, but also, for example, capacity utilization rates (Lancioni 2005). However, the external determinant, such as value, consumer surplus and price needs to be understood in the successful pricing situation even that those cannot be directly used in calculations (Wihinen 2012).

Wihinen (2012) concluded in his doctoral dissertation: “It still appears reasonable to conclude that almost all companies use cost information in their pricing decisions in one way or another.” Shipley and Jobber (2001) argued that the two most relevant cost information by the light of pricing are direct costs and average costs. Direct cost means all the costs that are caused directly because of the offering, such as raw material and direct labor. The average cost, in turn, includes also indirect costs, which cannot be attached directly to the accounting object but still have a connection to it like, for example, salaries of the management. (Suomala et al. 2011, p.94) The idea of these costs in the pricing

situation is to provide short term and long-term price floors in pricing situations (Shipley & Jobber 2001).

In the market-oriented company, cost information could provide information about the possibility to achieve the market price with the price that also makes a profit. In a long-term view, prices should cover all the costs that occurred to produce and deliver the offerings. However, in a short-term point of view, there is no need to cover the average cost completely if the company can achieve something else, which can lead to more profit in the long-term. Because of these situations, companies should have a short-term price floor, which includes only direct costs. With this lower price, companies could achieve, for example, a new key account or launch of a new product. (Shipley & Jobber 2001)

Hinterhuber (2004) present CVP (cost volume profit) analysis, which is a very useful way to analyze pricing decisions from the company's point of view. CVP analysis is a simple tool to analyze how different price changes have an impact on the company's profitability and how much their sales need to change to keep the same level of profitability. In addition, the ability to change prices depends heavily to the contribution margin of the product, since a ten percent discount will require a hundred percent sales increase if the contribution margin is only a twenty percent, but it requires much less if the contribution margin is, for example, eighty percent. (Hinterhuber 2004; Nagle 2011). Furthermore, Nagle (2011) highlighted the balance between market share and profitability to maximize the profits. Furthermore, they noted that cost-oriented pricers are usually reluctant to decrease the price, even that it will generate more profit through increased demand, but competitor and marked-based pricers may be reluctant to increase the price if they lose customers (Nagle 2011).

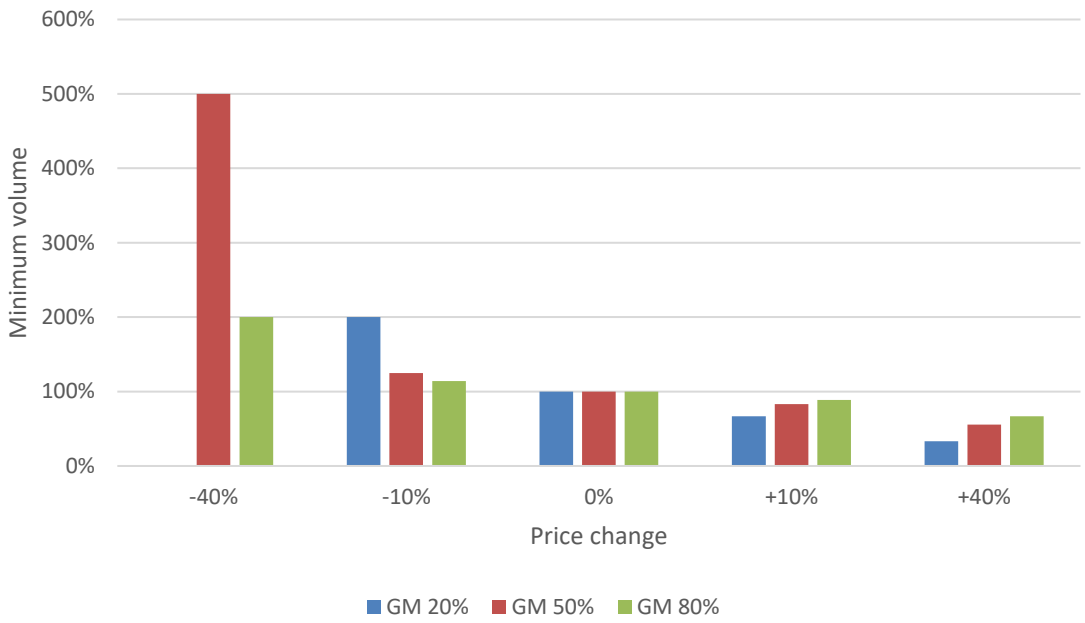

Figure 5. CVP analysis modified from (Hinterhuber 2004)

The external factors that should have an impact on pricing decisions relate to the customer and markets outside of the company. These external factors could be, for example, buyer sensitivities to prices, barriers to entry, distribution infrastructures and economic trends (Lancioni 2005). Shipley and Jobber (2001) further divided external factors to the customer needs, budgets, buying behavior, customer knowledge, perceived risk, and competitive conditions. These mentioned factors determine the market curve, where the y-axis represents the price and x-axis the quantity demanded. The market curve measures the market sensitivity so that the steeper the curve is the less price sensitive markets are which means that price changes will not affect that much to customers buying quantities. (Shipley & Jobber 2001) Nagle (2011) noted that, for setting price company needs to assess the price sensitivity of market segments because even those customers will value the offering similarly, they will have different abilities to purchase. However, Hinterhuber (2016) argued that customers are not often very price sensitives but they are rather sensitives with other benefits. These benefits could be quantitative like revenue increase, cost reduction, and risk reductions but also qualitative like brand expertise, a record of accomplishment, and process benefits. In addition to this, companies in the B2B sector usually look more at the total cost of ownership than just the purchasing price. (Hinterhuber 2016).

Price sensitivity is not constant as a company can influence customer price sensitivity. Nagle (2011) pointed out seven different factors that affect the customer price sensitivity.

These were size of the purchase, shared cost, switching cost, perceived risk, the importance of end benefit, price-quality perceptions, perceived fairness, and price framing. In addition to these, Shipley and Jobber (2001) highlight that urgency of need, strong differentiation, complete against few alternative solutions and complementary to other highly-priced product can reduce the price sensitivity.

Similarly, Hinterhuber (2004) provides a framework for managing the economic value by decreasing price sensitivity, which can, in turn, provide the ability to increase their prices to the company. The first step is to increase the value of product perceived substitutes. The idea of this step is comparing the own product to some more value-adding reference offering. (Hinterhuber 2004) For example, comparing electric bike to the car rather than the normal bike in the case of a working trip may lower the perception of the price. The second part is to highlight the product's unique value, which differentiate the offering from the competitor's offerings. The third part is to create the switching cost for changing the company's product to other competitor's product. The companies could do this in several ways but also a close relationship could cause the barrier to switch the supplier. The fourth part is to make a comparison to offering difficult or even impossible to other offerings. (Hinterhuber 2004) For example, manufacturers could offer different kind of services, which are hard to compare. Furthermore, Nagle (2011) noted that this part would increase the risk of change to the customer. The fifth step is to increase the price by the light that higher prices can signal higher quality to the customer. The sixth step is to relate the offering to an important end benefit. One typical way to demonstrate this end benefit is total cost of ownership, for example, in the case where some more expensive product could save more money in the time of its life cycle. The last step is to be fair or at least make the impression of fairness through god marketing practices. (Hinterhuber 2004)

In Hinterhuber (2004) pricing process the main analysis is the economic value analysis, which focuses to the customer element. This economic value analysis consists of six different steps. The first step is to identify the cost of the customer's best alternative to meet their current need. The idea of this is to use this as a reference product and the cost of this represents the reference value. (Hinterhuber 2004) However, this stage can be problematic as direct reference products might not exist and the price for it could be also hard to find (Nagle 2011). Similarly, Guerreiro and Amaral (2018) notes that companies in B2B sector usually makes very complex and customized product, which might be difficult to compare to other products.

The next step in this analysis is to segment the market based on how different customers value their reference products. Forbis and Mehta (1981) found out that the most common factors that affect to the customer perceived value was the intensity of product usage, geographical scope of usage, growth on the customer business and nature of application. Furthermore, Shipley and Jobber (2001) find out that pricing segments could base on different factors as time utility, the urgency of need, buyer loyalty, buying power, location preferences, channel preferences, and product augmentation. However, Nagle (2011) and Hinterhuber (2004) suggest that segmentation should be based on the actual value that the customer perceives. For example, segmentation of service could be done so that one sector is for basic needs of the customer, one for a customer who seeks risk coverage and one for the customer that needs the highest quality of service (Ding 2007). The segmentation is important because if the company set the same price to the whole market, it misses the potential profits from high-value segment and losing a customer in low-value segment. In addition to the customer perceived value, segmentation should also base on the cost of serving the customer. (Nagle 2011)

The third step in this process is to identify all the factors that differentiate the offering from the reference offering. These differentiation factors could be, for example, reliability, performance, easy to use, life cycle costs, safety, and service. (Hinterhuber 2004) However, Nagle (2011) note that, for example, the percentage of a performance increase will not directly increase same percentage of the customer perceived value because it depends on the customer process. The change of the value may be less or even more (Nagle 2011). The fourth step is to determine the value of these differentiation factors (Hinterhuber 2004). In the B2B sector, these differentiation values are monetary rather than psychological so the value is usually easier to quantify (Nagle 2011). However, the assessment of the differentiation value requires a thorough understanding of the processes (Michel, S. & Pfäffli 2013). One possible tool for determining the value that customers will receive from the offering is value-driven tree. The tree has three different levels of value drivers and metrics, which are strategic, business-specific and operational. The value drivers in the operational level affect the other drivers in business-specific level, which, in turn, have an impact on the strategic level. (Ding 2007)

The fifth step is to sum the differentiation value and the reference value to calculate the total economic value. Because of the different reference values of the customer, this step does not provide the one monetary value for the offering but rather value pool, which includes different values in different segments. The last step in this process is to use the value pool to estimate the future sales at the specific price points. (Hinterhuber 2004)

The discrimination of the prices can be done in different ways: different prices to every customer, different prices to the different offerings, but the same price based on quantity or the price, which is always the same to the particular customer but different to other customers (Ding 2007).

The last part of the key determinant is competitive analysis. Shipley and Jobber (2001) divided competitors into the three categories, which are segment, market or generic level competitors. Segment level competitors provide somewhat same products or services when market level competitors sell different products but the same functionality. The generic level competitors, in turn, provides the offering to the same generic purpose, but different functionality. All of these categories have an impact on company pricing but segment level has the most significant impact. Furthermore, competitor's pricing has the most significant impact in oligopolistic markets, where is only a couple segment level competitors. However, companies have to constantly monitor competitors' pricing but also consider how competitors might react to the company's own pricing decisions. (Shipley & Jobber 2001)

The competition analysis in Hinterhuber's (2004) framework includes six different factors. The first factor is the threat of new entrants, which depend on different factors, such as access to distribution channels and raw materials, technical barriers to entry and customer tendency to switch the supplier. The second factor is price trends in the market, which include info about price levels and trends. With this info, companies can react agilely to trends but do not react to the customer's false info about the competitive prices. The third factor is competitive strategies in the market. This will provide the information, for example, the competitor's objectives in different segments and product lines and their strengths and weaknesses. The fourth factor is the information of distribution channels, for example, their market share, amounts, prices, and payment policies. The fifth factor is the reverence value of customer groups, which is necessary for economic value analysis to measure the reference value. The last factor in competition analysis is to analyze the competitor's reactions to price changes. (Hinterhuber 2004)

3.2.3 Price strategies

The fourth phase of Shipley and Jobber's pricing wheel is to decide on the price strategy. However, the meaning of the price strategies is different from Nagle's (2011) strategic pricing because these are more practical and specific ways to price the offering. Shipley and Jobber (2001) presents a price position strategy, which consists of two dimensions,

which were price and perceived benefits of competing suppliers' offerings. With these dimensions, Shipley and Jobber (2001) build the framework, which includes nine different positions:

Table 1. Price position strategies modified from (Shipley and Jobber 2001)

		Perceived benefits of competing suppliers' offerings		
		Low	Medium	High
Price	Low	Chancer	Thriver	Market Ruler
	Medium	Bungler	Also-Ran	Thriver
	High	No-Hoper	Bungler	Chancer

Shipley and Jobber (2001) pointed out that only market ruler, thrivers and chancers have some possibilities in the market because they have either low prices or high-perceived benefits or both. However, they noted that in the case of chancers and thrivers, the high-perceived benefits are a better position than cutting cost and decreasing the prices are easier than creating more benefits. (Shipley & Jobber 2001)

Shipley and Jobber (2001) also evaluate three different new product pricing strategies, which were long-term real price, price skimming, and price penetration. The long-term real price means that the company keeps the price on the same level in a sustained period. Price skimming, in turn, means that the company first sets the prices high level and then systematically lower the price later. The idea of this strategy is to first receive high prices from low price sensitive customers and later try to receive revenue also from more price sensitive customers with lower prices. The logic of the market penetration strategy is, in turn, vice versa where the company first set relatively low prices and then tries to raise those in the future. The idea of this is to seek a large amount of price sensitive customers at first stage and try to build loyalty with the customer so that it provides the company the opportunity to raise the prices. (Shipley & Jobber 2001) All of these strategies have advantages and pitfalls and selection of the most suitable strategy depends on the objectives of the pricing.

3.2.4 Pricing methods

Pricing methods could be divided into the three generic pricing methods, which are, cost-based, competition-based and value/market-based pricing methods. (Hinterhuber & Liozu 2012) The most widely used single pricing method is the cost-plus pricing method (Shipley & Jobber 2001; Nagle 2011). In addition to this, target return pricing, markup pricing or break-even pricing are also widely used cost-based pricing methods. (Hinterhuber & Liozu 2012). The basic idea of the cost-plus method is forecast sales volume, then calculate the direct and fixed costs of product and then add a profit margin to average cost (Shipley & Jobber 2001). However, every cost-based method based on using accounting data which relate to cost (Hinterhuber & Liozu 2012).

The main reasons for using the cost-based pricing method are perceptions that it is simply, improves customer relations, is a standard process, provides price stability in stable markets, is fair to the customer, competitors use it, and is the most profitable method (Shipley & Jobber 2001). However, Shipley and Jobber (2001) argued that many of these reasons are not valid at all because, for example, allocating of fixed costs can make pricing far from simple approach, even though that data could be easily available (Hinterhuber & Liozu 2012). In addition to this, the cost-based method is not fair to customers if the customer value has not been taken into account and it is not the most profitable method (Shipley & Jobber 2001).

The main problem of the cost-based approach is that it has ignored customer perceived value and competition situation (Hinterhuber & Liozu 2012). In addition to this, Shipley and Jobber (2001) listed more specific problems with cost-based pricing. First, the experience that cost based-pricing is simple could lead the situation that managers with a lack of understanding of the market will manage it. In addition, pricing based on the average cost will prevent to offer a discount for achieving other objectives. Furthermore, one main problem is the fact that a cost-based price starts with the assumption of demand, which, in turn, depends on the price level. (Shipley & Jobber 2001). As a result, the assumption of the demand can go wrong, which leads a difference in the cost, which, in turn, leads to a decrease or increase of the price. Thus, the increase or decrease of the price changes the demand, which leads even new price changes. (Nagle 2011)

However, Guerreiro and Amaral (2018) point out that companies do not automatically use the cost-based method if they have calculated the price and used cost information

because even the contribution margin can reflect the value. Cavusgil (1996), for example, divided different cost-based pricing methods for global markets to rigid cost-plus, flexible cost-plus, and dynamic incremental pricing. In this approach, flexible cost-plus pricing mean that the margin of the offer depending on market situation. Dynamic incremental pricing, in turn, means that only direct costs are obligatory to cover in special situations and the gross margin can depend on a case by case. (Cavusgil 1996)

Competition-based methods use more information outside the organization as it includes the analysis of competitor's prices and their changes (Shipley & Jobber 2001; Hinterhuber & Liozu 2012). In addition, companies have to consider external factors like broader political and environmental factors, because missing those could risk company's long-term position and survival in the markets (Indounas 2019). However, using the competition-based method does not automatically mean that companies should use exact same price than their competitors but rather adjust their price above or below based on the differentiation (Shipley & Jobber 2001).

The main advantages of competition-based pricing are that it is simple to manage, it takes the competition situation into account, it allows to follow the market leader's price increases and prevent from being disadvantaged with competitors price cuts (Shipley & Jobber 2001). However, the competition-based methods could lead to a price war situation (Hinterhuber & Liozu 2012). Other disadvantages of this method are that it ignores company's own costs, ignores the customer perceived value, competitors price could be out of date and could have secret discounts, ignores customer demand and may ignore other objectiveness too (Shipley & Jobber 2001; Hinterhuber & Liozu 2012). Furthermore, Dutta et al. (2003) pointed out that competitor's prices could be hard to figure out as they might have different prices in different groups. Similarly, Guerreiro and Amaral (2018) noted that price-makers that usually operate in the B2B sector rarely use the competition-based methods without market intelligence, because competitors' prices are not so visible than for price takers mainly in B2C markets.

Market/value-based pricing examines pricing through the customer perceived value. This customer perceived value indicates the maximum that customer is willing to pay for offering (Forbis & Mehta 1981; Shipley & Jobber 2001; Hinterhuber & Liozu 2012). If the price is substantial, lower than the customer perceived value is, it brings the opportunity to the company to raise its price (Shipley & Jobber 2001). However, value-based pricing requires deep understanding of customer needs, perceived value and price elasticity (Hinterhuber & Liozu 2012). Forbis and Mehta (1981) noted that actual pricing in the value-based method should be considered as a sharing of benefits between the supplier

and the customer and not just setting the price as high as possible. Companies have to compare between their profit and customer inducements, which also vary in the different market segments. (Forbis & Mehta 1981)

The main advantages of value-based pricing are that it has a direct link to the customer, price that the customer is willing to pay and it recognizes the opportunity to receive higher prices depending on the segment. The main disadvantage of this pricing method is that data of customer preferences, willingness to pay, price elasticity and size of the market segment is hard to gather. (Shipley & Jobber 2001; Hinterhuber & Liozu 2012) In addition, the price that is based on customer willingness to pay may be problematic, as professional buyers may conceal the actual value and their willingness to pay for reaching cheaper prices (Nagle 2011; Michel, S. & Pfäffli 2013). Furthermore, value-based pricing can ignore own costs and competitors' prices (Shipley & Jobber 2001). Moreover, Hinterhuber & Liozu (2012) noted that increased value-based price could attract new entrants to the market with slightly lower prices.

Because of the complexity of pricing decisions, there is usually a need to use more than one pricing method (Indounas 2009). Moreover, Pricing should be based on multistage processes, which investigate and merge different factors that have an impact on the pricing decision (Shipley & Jobber 2001). Shipley and Jobber (2001) formed an integrative pricing technique, which starts with the assessment of the customer value, which sets the roof of the price. The next step is to calculate direct costs and assess average costs, which reflect the short term and long-term price floors. Similarly, Hinterhuber (2016) argued that cost-based pricing is not a useful practice itself but it is needed to set the lower boundary to the price when the customer perceived value represents the upper boundary. However, Nagle (2011) argued that if the offering has positive differentiation value in relation to the reference product, the price floor should not be below the price of the reference product. After these boundaries a company must determine, are their marketing, pricing and strategic objectives feasible with the existing gap and does it provide sufficient scope for the other influences. These influences could be, for example, complementary product impact, competitor's reactions, new entry probabilities, legal situation, and other internal and external factors. (Shipley & Jobber 2001) In addition, Nagle (2011) noted three different factors that should be taken into account when setting the price, which were overall business strategy, price-volume tradeoffs, and customer response. After all the influences price can be set.

Many times the value-based pricing itself includes the elements of competition and cost-based pricing. As noted in the last paragraph, for example, Hinterhuber's (2016) value-based pricing method included cost-based calculations for the lower boundary. In addition, they demonstrated how competitors' price changes affect the customer perceived value, which may have an impact on the price depending on how large differentiation value is in relation to competitors offering. Furthermore, Forbis and Mehta (1981) compared the offering to the reference offering which could be competitors offering. In this light, value-based pricing may require insight on competitors' prices and features of the offering too.

Hinterhuber (2004) suggests that after analyzing the key elements of the pricing, the company should determine a range of profitable prices. This part is done with all info about the key element so that the price is suggested based on the economic value analysis. Then using CVP analysis, managers could check how much, for example, a price increase will allow a decrease of the demand. If managers then think that the actual decrease of the demand would be less than CVP analysis allows, the price increase could be possible. (Hinterhuber 2004)

Pricing is not just the one-time process because the determinant on which the price is based, changes continually. Successful pricing practices anticipate competitor's moves, protecting a market segment from competitive pricing initiatives, responding immediately to customer complaints and adapting pricing to the changing needs of the market. (Indounas 2009) Shipley and Jobber (2001) argued that it is also important to manage and control the price according to how different stakeholders will react to it after the price setting. In addition, Hinterhuber (2004) noted that the pricing process should have a feedback loop and because of different assumptions and environmental factors, the price should be monitored again.

3.2.5 Implementation of prices

Hinterhuber and Liozu (2012) divided pricing capabilities to price setting and price getting capabilities. Price setting means the ability to set a price to the right level so that customer is willing to pay for it and it covers the cost and takes marketing and other factors into account (Hinterhuber & Liozu 2012). These capabilities represent the actual pricing that we have defined previously in this chapter. However, price getting, in turn, means how a company succeeds to receive these prices from a customer, which can be af-

fected, for example, by communication of the value to the customer, salesperson capabilities and incentives (Hinterhuber & Liozu 2012). These, in turn, represent the implementation of the prices. With these two factors, Hinterhuber and Liozu (2012) determined five different zones of pricing. The ideal zone is the pricing power zone, where a company uses a sophisticated value-based pricing and robust pricing processes, but also has pricing capabilities throughout the organization so that they are able to justify the prices to the customer. The model demonstrates that even if a company uses value-based pricing, it does not automatically capture the value and stay in the value surrender zone without realizing the value through robust processes. (Hinterhuber & Liozu 2012) For this reason, the implementation of prices is also important.

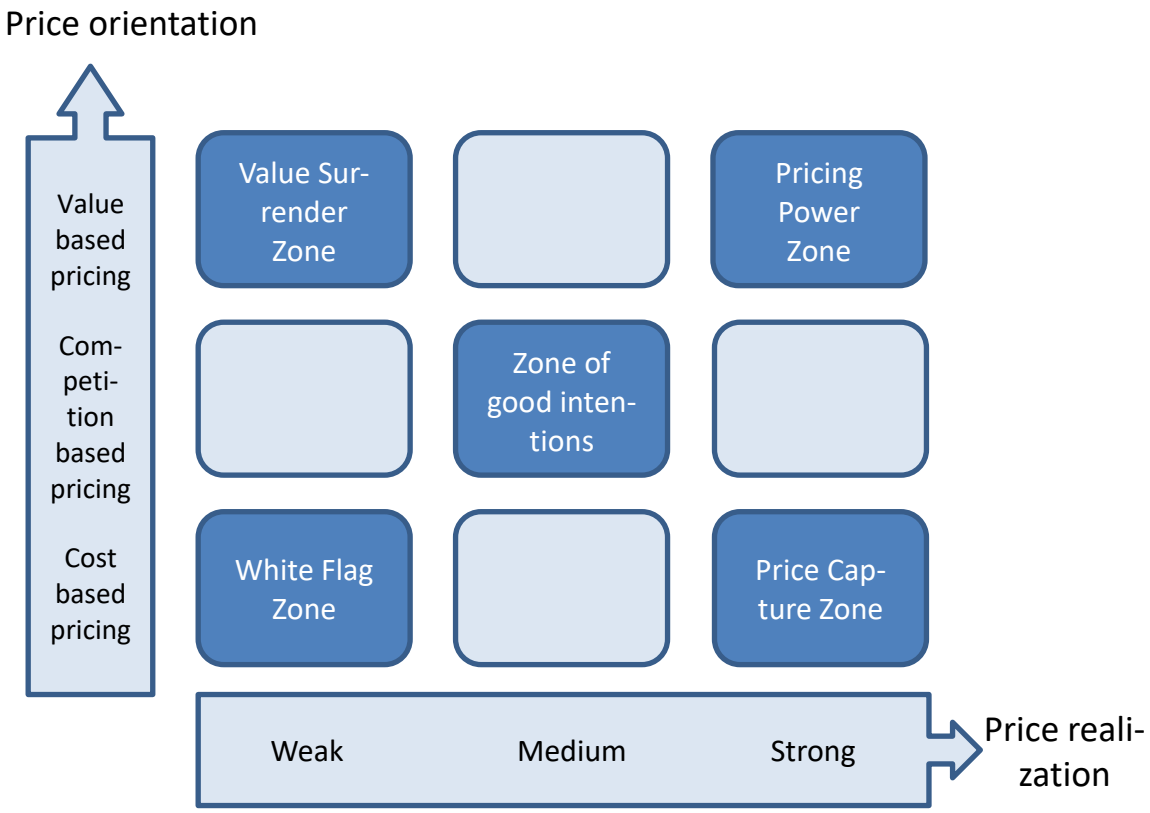

Figure 6. Five primary zone of pricing modified from Hinterhuber and Liozu (2012)

The last part of the Hinterhuber (2004) process is to implement the price changes. The implementation of price changes is usually targeted to the sales force, because they have a very important job justifying, communicating and implementing price changes. Therefore, this model provides some suggestions relating to the sales force for implementing new pricing. These suggestions are involving sales executives in pricing deci-

sions, implement a fixed price policy, reward salespeople for profits, involve sales personnel in the strategy process, be creative with marketing strategies, make the company easy accessible for the customer, and converge commercial and technical people. (Hinterhuber 2004) In addition, Michel and Pfäffli (2013) noted that companies have to document the customer perceived value so that customer are able to understand it. In addition to this, Nagle (2011) highlighted the importance of sales incentives because revenue-based incentives lead sales representatives to offer discounts for closing deals. If incentives based on profits, they would not give up on price premiums so easily (Nagle 2011).

New pricing approaches also require new organization priorities, new structure, capabilities, processes, and tools with different incentive systems (Hinterhuber & Liozu 2012). Lancioni (2005) suggested that companies should form multifunctional pricing teams, which are capable of all different perspectives that relate to pricing decision into account. Furthermore, Dutta et al. (2003) argue that the pricing process should involve different personnel from different functions of the company. In addition to this Nagle (2011) argued that implementing a pricing strategy requires input coordination between different units like marketing, sales, capacity management, and finance. Furthermore, they emphasized that every function that is involved in the price setting should understand their role in it. However, this is not an easy task, because every function in the organization has its own incentives and they all need different kinds of data for evaluating the pricing situation in their perspectives. (Nagle 2011)

3.3 Pricing in service business

Even though there is quite much literature on pricing and manufacturer's service business, there is not so much literature about the pricing of them. The one important aspect that distinguishes service pricing from the pricing of a product is its intangible nature, which can affect the customer perception of the price. However, the intangible nature brings challenges also to the customer to compare services as they can only evaluate those based on experience and credence. (Berry & Yadav 1996) In addition, intangible nature increases the diversity of customer demands (Docters et al. 2004).

Indounas (2019) studied the pricing objectives of industrial service firms. They found out that the market-based objectives as maintaining existing customers and attracting new customers were the most important objectives regardless of the market structure. In addition, they noted that cost-related objectives like cost coverage were also somewhat

important. However, this is understandable because all of the organization goals are set for achieving long-term financial objectives as we stated earlier (Diamantopoulos & Mathews 1994; Shipley & Jobber 2001).

In addition, Indounas (2019) studied how different marked conditions affect the industrial service firm pricing objectives. He found out in the study that companies that have a competitive advantage in high-competitive markets seem to set profit maximization objectives for their pricing. Companies that, in turn, do not have a competitive advantage in the competitive market usually seek to obtain fair prices from their customer and more satisfactory than maximization results. In the oligopolistic markets, pricing objectives usually relate to the stabilization of sales by retaining their existing customer base. Price sensitivity in the market could lead industrial service companies to seek cost coverage and increase their market share by their pricing. (Indounas 2019) Furthermore, Indounas (2009) noted that larger service companies perform pricing activities more systematic way than smaller companies do. Particularly they especially pay attention to maintain and expanding business in their existing customer base by offering new services to them and try to seek long-term profitability in that way (Indounas 2009).

Indounas (2015) found in his research that the adoption of strategic pricing in industrial service firms has a positive impact on their performance. In addition, they studied how different aspects affect the adoption of strategic pricing. For example, market orientation and market growth have a positive impact on the adoption of strategic pricing. In turn, technological and market turbulence affect negatively the adoption of strategic pricing. Furthermore, they noted that market orientation weakens the effect of market turbulence by the light of the adoption of strategic pricing. (Indounas 2015) However, service companies use mostly the cost-plus pricing and pay attention to competitor's prices, but not so much value-based pricing (Indounas 2009). Indounas (2015) argued that industrial service firms should not use only as cost-based pricing but rather price them based on the market point of view but not forgot the companies' own cost. Therefore, market-oriented approach in industrial service pricing leads to more effective pricing decisions (Indounas 2009).

In the machine manufacturers' service business, pricing of product-related services has been a difficult issue (Anderson & Narus 1995). Malleret (2006) noted that the pricing of these services raises a few questions. The first question is, should the company even charge for services because it is easy to offer services to the customer free of charge. Anderson and Narus (1995) noted that in many companies, sales force offers services

free of charge so that they are able to close the deal of product. However, they noted that this way of working is caused because the sales force does not know the cost of services (Anderson & Narus 1995). The second question in Malleret's (2006) study was that should prices of service just cover the costs or should those generate a margin. If profitability is viewed through the product life cycle, it might be justified but the manufacturers' service business financial potential is usually too significant to miss. Adding charges to services helps to keep the company's core-product price competitive and prevent to serve the most costly customers free of charge. (Nagle 2011)

Anderson and Narus (1995) point out four different problems of charging services. The first reason is that services are poorly designed because they do not allow flexibility to meet objectives in different segments, which causes the difficulty of using dynamic pricing. The second problem is difficult to assess the customer perceived value of the service. (Anderson & Narus 1995) This relates to the value-based pricing we presented previously. The third reason that industrial firms usually focus more on products than services. The last problem is that the sales force has the wrong incentives, which lead them to offer services free of charge. (Anderson & Narus 1995) This, in turn, relates to the implementation of pricing, which we also discussed previously in this chapter.

Service providers can differentiate themselves from competitors by tangibles features, but usually intangible features, like quality or pricing of services, are more effective ways to differentiate the service from the competitor's services. Pricing of services is more credible when it is simple and easy to understand from the customer side. However, too simply pricing model does not recognize the different needs of the customer. (Berry & Yadav 1996) To this problem, Berry and Yadav (1996) provide three different pricing strategies to service providers, which are satisfaction, relationship, and effective pricing strategies.

3.3.1 Satisfaction pricing strategy

In the service business, customers are usually prone to pricing abuse. The idea of satisfaction pricing is to decrease the uncertainty that customers have to the prices and quality of the service. One activity, which is useful to decrease the uncertainty, is service guarantees. (Berry & Yadav 1996) Docters et al. (2004) argue that adjusting pricing to meet the variation of quality of the service could be done by address the risk of failure. Depending on the frequency and consequences of the failure, the uncertainty can be decreased by different actions. In low frequency and consequences of the failure, the

company can simply give money back, but this is probably not suitable if the consequences are serious. In these cases, the company should give or sell insurance to the customer. If the consequences are low but the frequencies of failure high, the company may offer low and high-quality levels to customer and base pricing on the actual value that they receive. If both frequency and consequences are high, the risk should be shared, for example, by joint ventures. (Docters et al. 2004) Overall, service guarantees represent quality and care of customer satisfaction and it is very useful if the customer perceives high risk, if the service is high quality and if the company wants to differentiate from competitors (Berry & Yadav 1996). In addition to this, considering failures is very important to a company's brand image (Docters et al. 2004).

The second activity that can be done in the satisfaction pricing strategy is benefit-driven pricing. The idea is to price the service based on the actual value that the customer receives from the offering. (Berry & Yadav 1996) Companies could, for example, use performance-based charges when pricing services, such as charging customers from maintenance based on tons that they have transport (Anderson & Narus 1995). Maintenance contracts, for example, could be priced based on operational availability and response time in case of failure (Oliva & Kallenberg 2003). However, as mentioned previously, these performance-based charges are usually unpractical, because they require plenty of information and trust (Nagle 2011). In addition to this, it might be very difficult to determine how different customers value the performance (Berry & Yadav 1996).

The third action that Berry and Yadav (1996) suggest to use in satisfaction pricing strategy is flat rate pricing. Many times the customer does not want to be uncertain about the final price (Michel, M. 2018). In the many labor-intensive services where the price in not fully known in advance the flat rate pricing decreases the uncertainty of the customer and moves the risk from the customer to the service provider (Berry & Yadav 1996). In addition, Michel (2018) noted, "The companies that offer flat-rate prices are seen as more honest and lower priced." To succeed with flat rate pricing, the price needs to be competitive, it should take unanticipated cost into account and the potential to relationship marketing must be high (Berry & Yadav 1996).

3.3.2 Relationship pricing strategy

The next price strategy provided by Berry and Yadav (1996) is the relationship price strategy. The idea of this strategy is to attract, maintain and enhance the customer relationship and benefit from long-term relationships. One option to increase the relationship with the customer is price discounting, but it is not a sustainable method as competitors can easily imitate it and it would not last long without any other actions. The better ways to perform a relationship price strategy are the use of price bundling and long-term contracts. (Berry & Yadav 1996)

The third question that Malleret (2006) noted relate especially to bundling decisions: Should services be charged as a bundled package with other services and products or separately? In addition, Mathieu (2001) raised the issue that service providers should make a choice between bundling and unbundling services. The bundling concept is quite regularly used for services where the customer pays a global price for a package, which includes different products or services (Mathieu 2001). Bundled packages can include services that are not available separately, but they can also include separately existing offerings with a lower price (Eppen et al. 1991). Furthermore, Malleret (2006) noted that bundling ensures the service profitability but the profitability is impossible to monitor if the service, which is part of the bundle, is not individually identified.

Eppen et al. (1991) noted that bundling might help companies to reduce costs, expand the market and increase the product or service performance. In general, bundling reduces the customer and supplier transaction costs, as they do not need to order every single transaction separately (Nagle 2011). In addition, the cost of additional services is usually lower than the same service, which is provided separately (Berry & Yadav 1996). Companies can also target larger segments with bundled packages and encourage them to purchase more comprehensive bundles through pricing. In addition to this, companies can engage customers with bundles packages. (Eppen et al. 1991) Therefore, it also enables to get more info about the customer needs, which helps to build long-term relationships (Berry & Yadav 1996). Furthermore, bundling products and services together may increase the sales of services (Eppen et al. 1991). Moreover, providing the bundled service to the customer increases capacity utilization and predictability of demand in the service organization (Oliva & Kallenberg 2003; Gebauer et al. 2005). In addition to cheaper prices, the customer can benefit from bundles by purchasing all the needed services in the same place (Berry & Yadav 1996). However, bundling can also cause the

situation that the customer has to pay for the elements of the bundle that they do not need (Anderson & Narus 1995).

In the case of charging services separately, companies need to develop a service strategy, consider pricing policies, segment the markets and achieve a certain level of quality in their services and begin to develop service strategy (Malleret 2006). As a result, unbundled services have been related to the higher cost because of the complexity of management (Eppen et al. 1991). However, unbundling provides the possibility to the customer to compare prices of all service activities (Mathieu 2001). Because of this and the fact that competition is more intense in the mature market, Mathieu (2001) thinks that unbundling strategy is more suitable in the mature markets.

Anderson and Narus (1995) suggest that companies should offer a very naked basic service with the lowest price and then offer optional services to the customer. This basic service should be something that every customer will need so that the customer can add optional services and pay only for the services that they really need. However, changes to the service element from the basic services to the optional service could make customer reductant to pay for it. Notwithstanding, this model of pricing could enable companies to use different pricing tactics, for example, giving some optional services free but reveal the actual price of it. (Anderson & Narus 1995) In addition to this, Raddats et al. (2016) suggest that suppliers of complex products should prevent to bundle services together with the product if they cannot indicate the value to the customer. Furthermore, bundling optional services free could decrease profitability if it is not limited (Nagle 2011).

Companies could also have a price structure that enables both of these bundling and unbundling practices. Docters et al. (2004) suggest that companies should make modular bundles so that the customer can choose the services, which they really need. For making this pricing structure, companies have to identify all the service elements that are required to meet customer needs. Each of these service elements should have its own separate price, and it should be easy to combine with other services. In addition, there must be simple rules for combining services and company need to minimize the overlapping of service elements. The benefit of a modular pricing structure for the company is that it can modulate the pricing to their customer based on their needs. In addition, customers cannot easily compare prices to the competitor’s prices. (Docters et al. 2004)

Another way to implement the relationship pricing strategy provided by Berry and Yadav (1996) were long-term contracts where the service provider provides different kinds of

monetary and non-monetary incentives to the customer. The service provider, in turn, benefits of the more steady and sustained interactions with the customer so that they can make more value to the customer than competitors. (Berry & Yadav 1996) In the manufacturers' service business, these usually mean maintenance contracts.

The most common pricing approaches that industrial maintenance has, were pricing based on time and material, and long-term maintenance contracts (Wolff et al. 2018). These so-called on-call services are transaction-oriented and charged directly when, in turn, the full-service maintenance contracts means that customers pay a fixed fee for maintenance of the machine during the agreed period. In these contracts, the operational risk moves from the customer to the supplier. The motivation for the customer to purchase this full-service contract depends on their ability to take the risk of machine breakdowns and short-term cash-flow stability. (Huber & Spinler 2014)

There are at least two motivations by the manufacturer for offering full-service contracts to customers. The first motivations relate to the competition of on-call services. It is important to know that even that manufacturer has the best knowledge of their machines, other OEMs (original equipment manufacturer) provide maintenance services also to third-party machines. In addition to this, on-call markets have many other small independent service companies that provide services to all machines at a much lower price. This usually led to a decreasing demand for on-call services, which reduces profits but also requires adaption of full-service contract prices if manufacturers start decreasing its prices. (Huber & Spinler 2014) However, Oliva and Kallenberg (2003) noted that manufacturers have unique advantages to serving services to their own installed base, which are a lower customer and knowledge acquisition cost and lower capital requirements. Lower customer acquisition cost relates the fact that manufacturers already have sold the machine to the customer and knows where their machines locate. The lower knowledge acquisition cost, in turn, relates to the already mentioned fact that manufacturers should know their product best. Lastly, the lower capital requirement based on production technology that companies already have for making upgrades and spare parts to the customer. (Oliva & Kallenberg 2003) However, by providing full-service contracts manufacturers could protect themselves from the competition in on-call business (Huber & Spinler 2014).

Another motivator of offering contracts relates to profitability. Huber and Spinler (2014) found that companies are willing to pay 1,5 percent more for insurance in service contracts than what it would cost them if they purchase those services one by one in on-call

business. However, Michel (2018) argued that customers that have the maintenance agreement should pay less because it cost less to serve the continuous customer. In addition to this, Huber and Spinler (2014) noted that customers who purchase full-service contract actually perceived to pay less than the sum of the expected on-call payments. Furthermore, Huber and Spinler (2014) emphasize the role of maintenance learning in the profit of full-service contracts. With maintenance learning, manufacturers can better estimate the cost of on-call services to the customer in the product life cycle and with that info set the full-service contracts prices to the right level. Pricing full-service contracts too low will transfer benefits to the customer and pricing too high will decrease the demand and thus keeping more business in the competitive on-call business. (Huber & Spinler 2014) Therefore it is important that on-call and full-service contract pricing is in the line.

Wolff et al. (2018) studied the pricing of field service, which not below the service contracts. They noted that industry maintenance services could be divided into preventive maintenance like installation and periodic maintenance, and unplannable corrective service. The challenge of corrective maintenance is the dispatch of the technicians as it is hard to determine, which customer's need for the technician is the most urgent. In the case of breakdowns, the customer's machine downtime causes the cost and therefore they are willing to pay more for urgent services. To this purpose, the actors developed the capacity-based pricing, which means that the price depends on the remaining available capacity. Generally, the most recent capacity is the most expensive, so the customers can segment themselves based on how much they are willing to pay for urgent service. However, this model requires the marketplace for the customer and has challenges, like the determination of the duration of the work. (Wolff et al. 2018)

3.3.3 Effective pricing strategy

Berry's and Yadav's (1996) third price strategy is efficiency pricing. The idea of this strategy is to understand, manage and decrease the cost of services by lowering the prices. However, the idea is not to decrease the cost in the field where it decreases the value to the customer. (Berry & Yadav 1996) For understanding the value, that customer receives from the service, Calabrese and De Francesco (2014) suggest to identify non-monetary cost and value-added service activities. This can help a company to identify critical success factors of the service and assess the service quality through customer perceptions.

The reduction of the unnecessary non-monetary cost and focus on critical success factors help companies to increase value to the customer. (Calabrese & De Francesco 2014)

Calabrese and De Francesco (2014) noted previous literature has raised several challenges to use value-based pricing in the service business. The first challenge was the difficulty of identifying the non-monetary cost of the customer, which could be, for example, waiting time and disadvantages during the services, which have an impact on the customer perceived value. The second challenge is the difficulty to define the value when it is based on the reduction of the customer costs. The third challenge is the difficulty to identify the value-added service features, which customer values the most. The last challenge, in turn, relates to the communication of the values to the customer. (Calabrese & De Francesco 2014)

Malleret (2006) provides a four-stage model for creating value through services. The model starts with the design of the service, which creates value for the customer (Malleret 2006). Second, the value needs to be realized with a suitable quality level and cost. Third, the company needs to communicate the value to the customer and do the charging visible, for example, through the performance-based pricing. The last step is to share the value between the company and the customer through pricing policy. (Malleret 2006) Overall, for achieving financial benefits from manufacturers' service business companies need to not only keep the cost of services under control but also need to implement a consistent pricing strategy (Mathieu 2001).

3.4 Summary of the theory

As the study of the thesis is very specific, there is a need to summarize the theoretical background. At first, the global manufacturer should assess different market characteristics, such as the factor that Cavusgil (1996) noted, as those might have an impact on the objectives of the business and objectives of pricing. The installed base data, for instance, defines the potential of the market. In addition, the competition of the market might have an impact on the desired level of attainment of objectives. The pricing objectives, in turn, should affect the selection of Berry's and Yadav's (1996) suitable pricing strategies, which we presented in the last section. The pricing strategies, in turn, provide suggestions to the overall maintenance business and the pricing structure, which was one part of Nagle's (2011) pricing pyramid. This, in turn, should have an impact on the

objectives of different elements of maintenance business, such as on-call business, service contracts, and bundled packages. Therefore, the objectives and strategies of the pricing relate to the business model of the maintenance business.

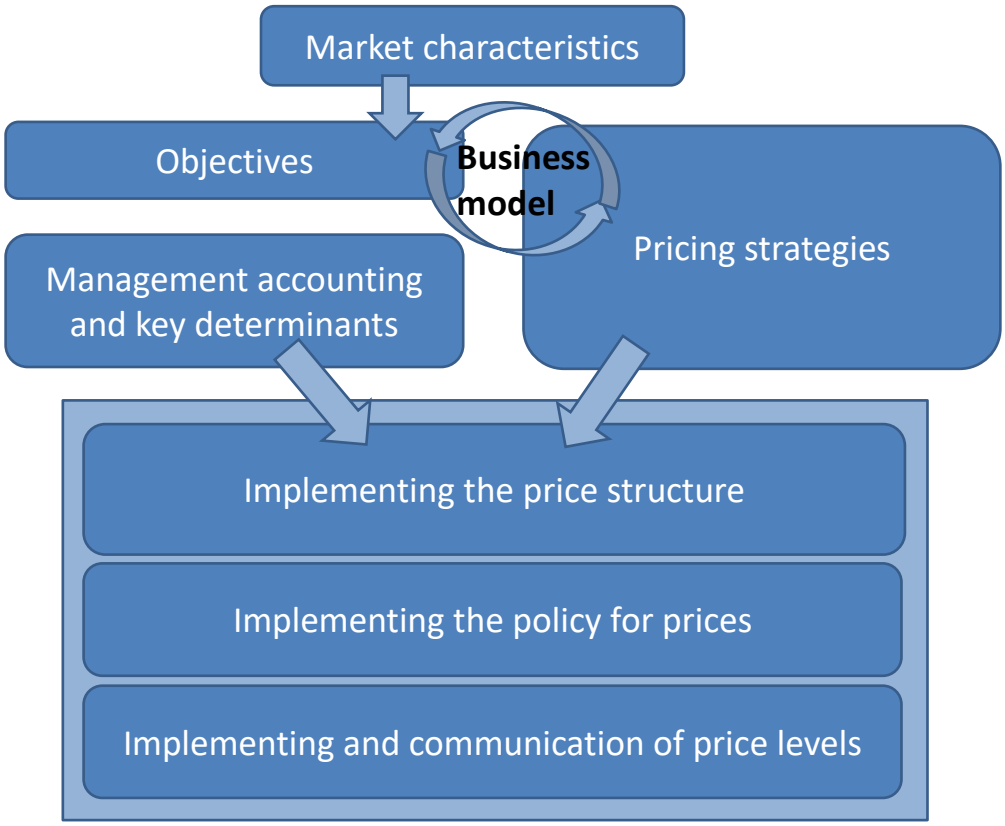

Figure 7. Process for pricing model

Assessing key determinant as Hinterhuber (2004) and Shipley and Jobber (2001) suggest, highlight the factors that should have an impact on the price of maintenance service, which was total economic value, cost information, and competitive information. This information, as well as information provided by pricing strategies, can be used to build the pricing structure to the pricing model. Therefore, the structure takes all three key determinants but also a strategic viewpoint inti account. In addition to this, this information can be used to set the pricing policy, which was also one level of Nagle's (2011) pricing pyramid. Lastly, the manufacturer can set the prices, but they need to consider should they centralize or decentralize the actual price setting. In addition to this, as Hinterhuber (2004) noted, the manufacturer needs to communicate the value to the customer and consider how to decrease the customer's price sensitivity, which also depends on the market.

4. RESEARCH PROCESS AND METHODOLOGY

4.1 Current state of case company

The on-call business of the company differs from the spare parts and contracts because it does not have any clear separate organization in the central organization. This has led to a situation where the management of the on-call business is done more on the frontline itself rather than in the central organization. Because of this, every frontline has its own practices for operating the on-call services. However, the company has recently done some framework and guidance to standardize the service process and provided a framework for how to charge different working hours and travel costs. However, this is not fully adopted in all frontlines. Service organization's pricing team has previously concentrated almost solely on the pricing of spare parts but has recently also focused more on on-call pricing. The pricing of service contracts is done, in turn, in cooperation with the service contract team and frontlines.

One of the strategical objectives of the company's service unit is to increase the level of maintenance under contracts, which, in turn, means that they want to change services from on-call business to full-service contract business. The company has different levels of service contracts, based on customer intention to outsource their activity from just support of maintenance processes to optimization of business processes. However, service contracts and on-call business has been managed in different teams in the central organization. Because of this, there is not so much interaction between on-call and contracts pricing at this point, which, in turn, may hamper the pricing of services so that it encourages the customer to move to the service contract business. However, frontlines also price both on-call works and clear service contracts themselves so that the interaction of the prices is probably noted in this stage.

Generally, on-call business is chargeable work, where the company's customer informs the front-line unit that their machine has some problems or needs some other maintenance. At first, the customer contacts the service dispatcher who tries to define the problem and the need. The dispatcher then plans and allocates the technicians to go to the customer field and make sure that the technician has all the needed parts with him. Finally, technicians travel to the field to check the history of the machine and perform the task that the customer is asking. After performing the job, the technician reports the job and work time, which dispatcher approves. Lastly, the admin sent the invoice to the customer based on the info that the technician has reported. Generally, all the used parts,

consumables, travel hours and other expenses are charged from the customer but it depends on the front line and the customer.

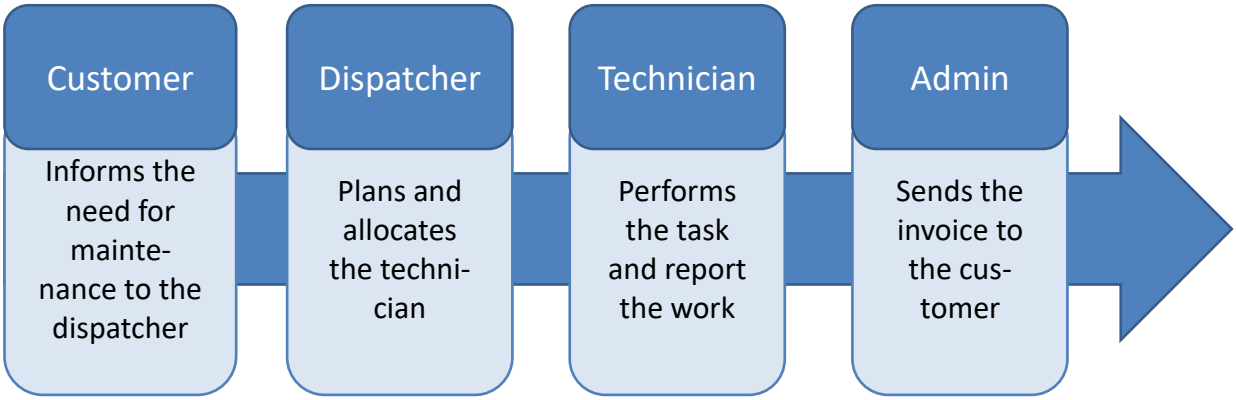

Figure 8. On-call process in the company

The company uses different codes for charging the work that they do to their customer. Overall, there were roughly even 70 different codes for just different kinds of work for customers that were used in the year 2018. However, only a few of them were regularly used as the most used code, normal working hour, covered over half of all sales of working hours. The large variety of codes is caused because of the different habits of the frontlines and the lack of enforcement to follow the global policy for using the codes. In addition, different frontlines can have different codes for different customers. Thus, it has led to a situation where frontlines may use the same codes for conflicting manners. This brings the challenge to maintain the business through the central organization.

The company also faces challenges in profitability in some regions. In on-call business, the technician utilization rate plays a significant role in profitability. In terms of pricing, the problem in some market areas is the competition with global and local service providers. The local service providers usually offer basic maintenance services to the company's customers at a much lower price, which has also made pressure to lower price rates in some areas. In many markets, some larger customers also have their own fixed hourly rates, which can be valid for several years. This usually leads to a situation where the actual average rate of the working hour is significantly lower than the list price. In this light, the pricing of on-call is usually dynamic, but there is no systematic framework for it. In addition, many frontlines do not have a systematic way to update prices on a regular basis, which leads to a situation where prices are out of the date.

As mentioned in the previous section, the competition has affected the pricing of on-call business at least in some areas through lower margins. However, the pricing is usually

also done mainly cost-based and not taken so much value into account. The company has a cost-based framework for setting the target price for frontlines' hourly rates, which takes direct cost, indirect cost, overhead burdens and margins into account. However, every frontline calculates their cost on their own, which may lead to different ways of calculations. Currently, there is also not such a clear indication that a different value for the customer reflects to the prices.

4.2 Empirical methods

For defining the method of the thesis, it is important to understand the underlying philosophy behind the actual methods. For this purpose, Saunders' et al. (2016) research onion is a useful tool as it starts with the philosophy of the research, which help to select the most suitable research methods for the purpose.

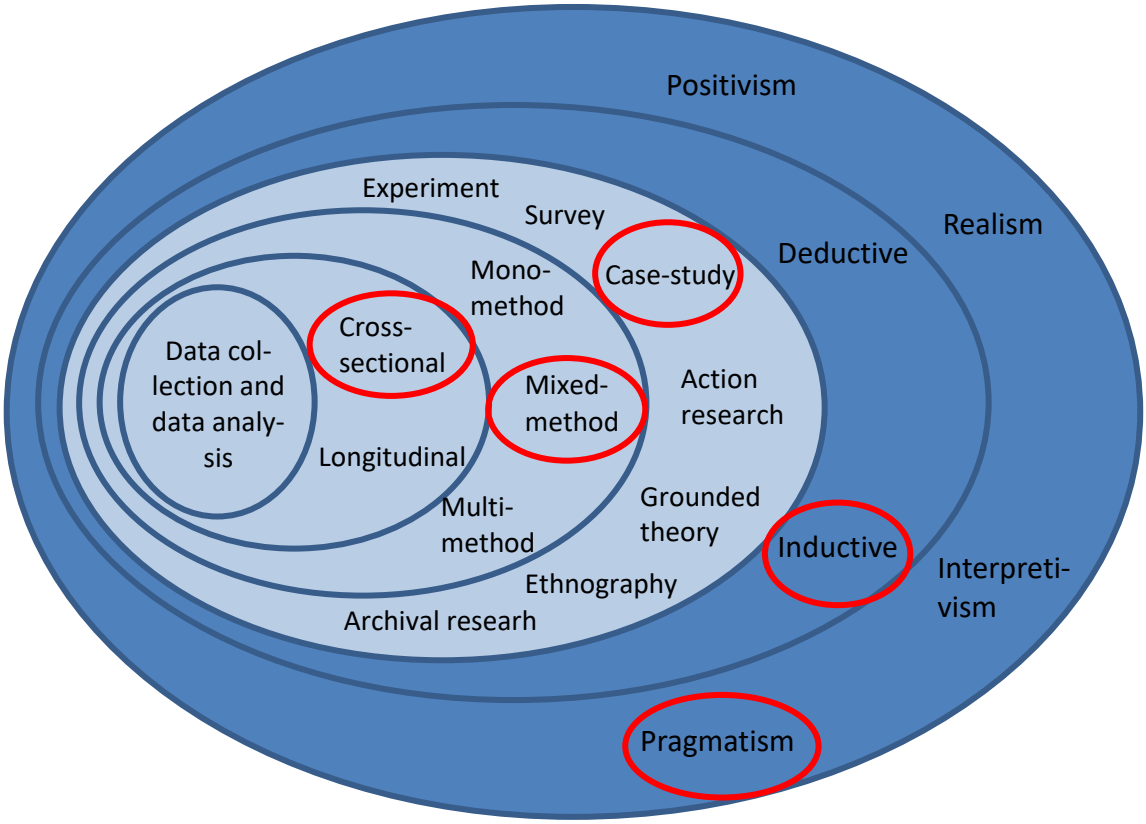

Figure 9. Research onion modified from (Saunders et al. 2009)

Saunders et al. (2016) research onion starts with the research philosophies, which are positivism, realism, interpretivism, and pragmatism. All of these philosophies differ from each other based on ontology, epistemology, axiology and most used data collection techniques (Saunders et al. 2016, p. 119). As the purpose of this thesis is answer to the

research question so that it helps the case company, pragmatism is the philosophy of this thesis.

The second part of the onion considers the decision of the research approach, which can be deductive or inductive. Generally, a deductive approach commences from the theory and then tries to test this theory with the data, which is usually quantitative. (Saunders et al. 2016, p.124-127) The main idea of the thesis is not to test the theory but rather use the theory for receiving insight about the phenomena of the case, which helps to solve the practical challenges. Because this thesis commences from data, it is inductive.

The next step of the research onion is to decide on the actual research strategy, which should be based on the purpose of the research. The purpose of the study can be exploratory, descriptive or explanatory. (Saunders et al. 2016, s.138-140) The research questions of this thesis are more explanatory and exploratory, so the case study is a suitable strategy for these purposes. The case study is a great method for gathering a rich understanding of the context of the research, which is needed for forming the new pricing process. Furthermore, the benefit of the case study is the possibility to use different research methods and triangulation, which means to use different methods for different purposes (Saunders et al. 2016, p.146). Moreover, this case study is a single case study as it is done to one company, but it is partially an embedded case study because it examines different frontlines separately.

The next step of the onion is to decide on the research methods, which are mono-, mixed- and multi-method. The mono method means that research uses only one quantitative or qualitative data in the research. Generally, the quantitative data means all numeric data, which can be analyzed statically, for example with graphs. The qualitative data, in turn, means all non-numeric data, like notes, which can be analyzed, for example, by categorizing the data. The mixed-method, in turn, means that research used both quantitative and qualitative methods in the same research. The multimethod, in turn, means that research uses more than one data collection technique but it is only quantitative or qualitative. (Saunders et al. 2016, p.151-153) This thesis uses the mixed method because the quantitative data provide basic information on the situation, which helps to select the best sources for qualitative data and facilitates the qualitative data gathering. Even though the quantitative analysis can partially answer the first research question, it is unable to answer the second research question. In addition, the quantitative analysis enables the examination of the situation of the company with a wider perspective as qualitative analysis can concentrate more on a few interesting parts of the organization. The

idea is not to clearly combine the quantitative and qualitative research so the method is more mixed-method research rather than mixed model research.

The qualitative analysis is done by analyzing the data of the interviews and partially the data of the quantitative study in terms of the pricing process framework provided by the literature. The purpose of utilizing the pricing process framework is to build the pricing model to the company, which takes all the needed factors like objectives, key determinants and implementation into account. Furthermore, building the pricing model with the pricing process should ensure that the pricing model is based on the value, which is the one objective of the thesis to the company. Moreover, this way of analysis should bring out the factors that are important to consider when building the model especially to maintenance services as the pricing process is more often used to price products. Therefore, the analysis partially also tests the theory to price services.

The next step of the research onion is the time horizons of the research, which could be cross-sectional or longitudinal. The cross-sectional time horizon means that the study is generally a “snapshot” of the situation, which is investigated. The longitudinal time horizon, in turn, means that research investigates the changes across time. (Saunders et al. 2016, p.155) Because of the nature of the thesis, the time horizon is limited and because of that, the time horizon is cross-sectional. The last part of the research onion is the actual data collection method of the research, which is explained in the next section.

4.3 Research process

The actual research process starts with the preliminary reading of literature, which helps to understand the underlying situation. Furthermore, the reading of literature provides ideas on what aspects should be looked at in the empirical side of the research. In the quantitative part of the thesis, the literature provides ideas on which kind of information will be needed and how to analyze it. On the qualitative side, the literature could raise different questions, which are worth to ask in the interviews. Moreover, the literature provides the framework for how the empirical data can be analyzed.

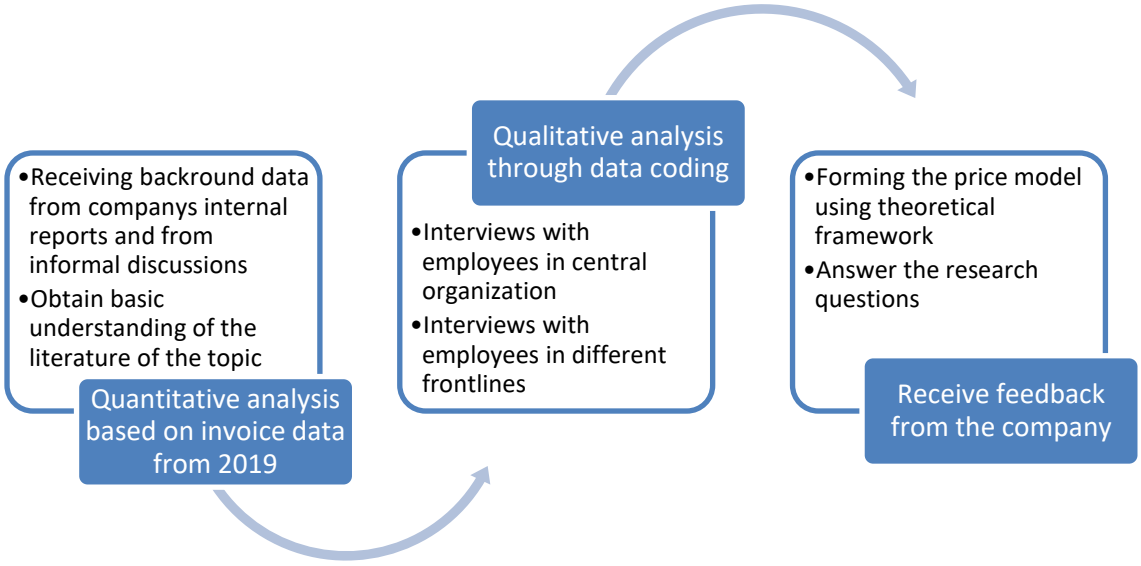

Figure 10. Research process

The company's internal report and informal conversations with pricing managers provide the background data of the company's situation. In addition, this is helpful for identifying the essential factors to investigate in both quantitative and qualitative part of the study. The company provides a very wide range of internal reports that include different kinds of information. Company has, for example, some information about list prices of front-lines, how different frontlines charge from on-call business and how they generally use different codes. In addition to this, other reports provide information about financial points of view like sales rates and profit margins.

The second step after the preliminary reading of literature and company internal reports is the quantitative analysis. The quantitative data are gathered separately from different frontlines because the system was unable to provide the whole data to one excel file. Because of that, the sample was only a few of the largest frontlines in terms of on-call business. The selection of the frontline based on the company's internal documents, which provides the basic background data of different frontlines, such as revenue, profit, and practices. However, a few frontlines are not included in the quantitative analysis, because of the poor quality of the data. For example, the quantity of hours was not visible in some frontlines and in some cases, the actual price doubtless includes some addi-tional features, which are not visible. These chosen frontlines are Sweden, Belgium, Germany, Finland, and Austria.

The collected quantitative data are invoicing data of on-call business in different frontlines in excel form. Because of the large amount of data, the data are gathered from the start of the year 2019 to the date, which was at the beginning of October. The data includes all the invoiced charges in the on-call profit center in the particular frontline. The data come from the company ERP system directly where all different charges have own codes. The data consist of information about the actual object like work, which is charged, amount, price, customer, product line and other aspects. With this data, it is possible to check, which codes bring most of the revenue and what are the actual prices of hourly rates. The idea of quantitative data is to investigate, how different frontlines use different labor codes and which factors affect the prices so it provides insight about market characteristics. Therefore, the quantitative analysis partially answers to the first research question, but with some factors, it does not provide a sufficient answer. Because of that, the qualitative study is also needed. The other objective of quantitative data is to obtain insight on the topic, which helps to identify the field that needs to be closely looked at with interviews. Therefore, the quantitative study work as an accounting object provided by Laine et al. (2016), which visualizes and increases the discussion with other stakeholders, which are interviewees in this study.

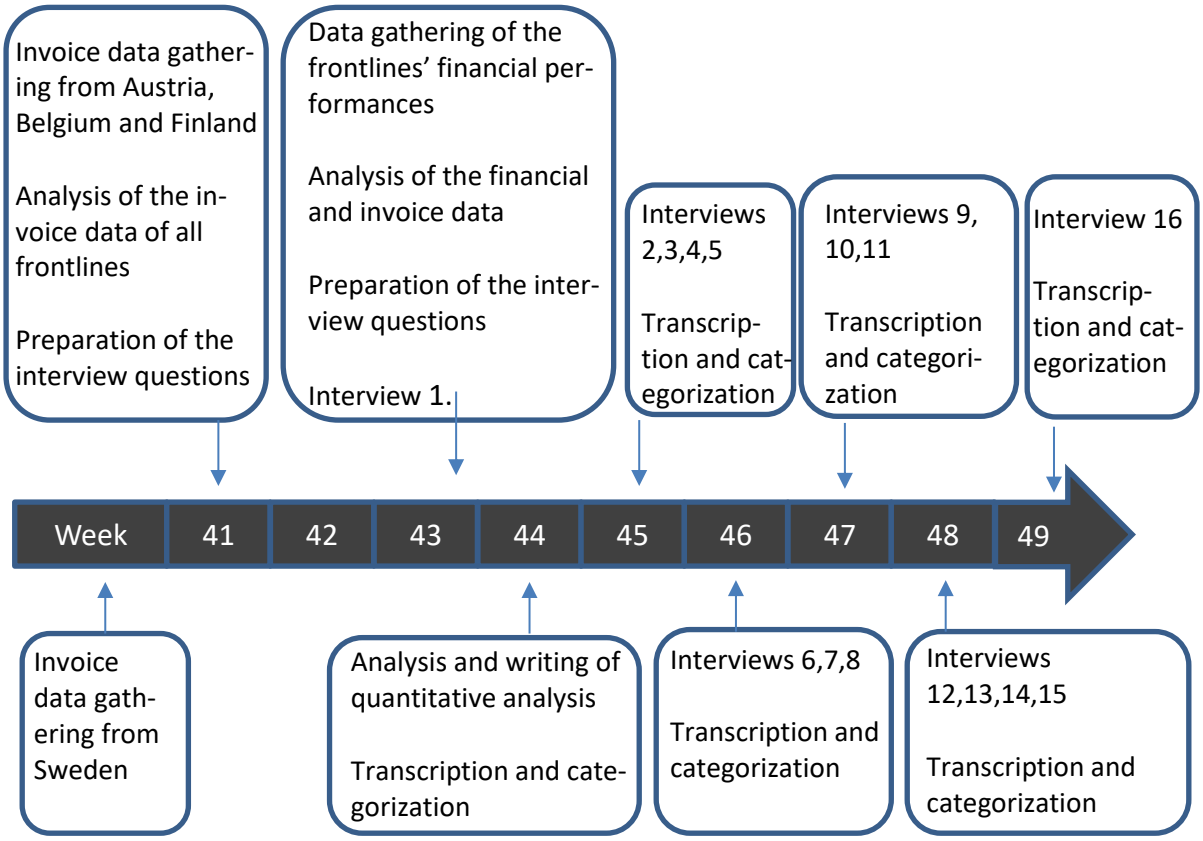

Figure 11. Time schedule of the empirical study

The quantitative analysis provides the information of these five frontlines and tells which frontlines are the most interesting object to study with qualitative analysis. The data search for the qualitative study based on different interviews from the central organization and from a few frontlines. The idea is to collect rich qualitative data from different perspectives of the organization by interviewing employees in different fields in the company.

This thesis is done to the large global company, which means that it is almost impossible to interview the entire population and that is the reason why we need sampling. Furthermore, it is unpractical and very laborious to interview all the frontlines that the company has but rather choose a couple of frontlines and gaining more understanding from them. The idea of the interviews is not to make statistical inferences and the sample does not need to be representative, but rather provide an understanding of the situation. Because of this, Saunders et al. (2016, p. 234) suggest to use non-probability samples, which are not based on randomness. Because the purpose of the study is not just exploratory but also explanatory, Saunders et al. (2016, s. 234) not suggest to use self-selection sampling. Because individual cases are not difficult to identify as the company has clear independent frontlines, Saunders et al. (2016, p. 234) suggest that snowball sampling should not be used either. However, this is used inside the frontlines, as they will know the best inside their organization, who is able to tell the most relevant information. Because the sample in the case of frontlines is very small as it includes only a couple of frontlines, Saunders et al. (2016, p. 234) suggest to use purposive sampling, which can focus on different aspects. Therefore, interviews in frontlines are chosen so, that they represent different markets or different viewpoints.

The selection of frontlines uses partially heterogeneous sampling, as the idea is to focus on key themes. However, as mentioned previously, these frontlines are selected in the group of five frontlines, which are already analyzed quantitatively. Because of that, these frontlines are not that heterogeneous that they could be, if those are selected from the whole group of the frontlines. After the quantitative analysis, the interviews are concentrated to Northern and Central Europe because of their differences. In addition, the frontline in Belgium is left outside of the interviews because of the poor availability of the interviewees. The idea was to get a somewhat similar sample of interviewees from both of the market areas so that it includes service managers but also interviewees on the operation side.

The interviewees inside the central organization have selected in collaboration with the company's contact persons because they know, which people in the organization could have interesting information about the topic. However, the persons in the central organization are selected so, that they represent a different viewpoint of the issue. Because of that, persons are selected from pricing, service contracts, operation and the financial side of the service organization. However, snowball sampling is also partially used here as suggestions of the interviewees are also taken into account.

The actual interviews were held from the end of October to the beginning of December. Most of the interviews were online meetings because many interviewees were based in different locations. The interviews were semi-structured where some of the interview questions differ according to the interviewee because the idea is to seek different kinds of information from different fields in the organization. For this reason, a separate question pattern is made for central pricing, contract managers, managers of the frontlines and the operation side in central and in frontlines so that they are able to answer those. For example, the central organization does not know exactly how the frontline uses working hour codes and what different codes include. However, many of the same questions appeared in several different question patterns. Generally, these were more opinion-based questions that do not have the wrong or right answers. In addition, one question pattern is made afterward about the cost calculations of the hourly rates.

The interviews start with short introductions of the interviewer and a short introduction to the subject of the thesis. Then the first question to the interviewee was always about their background, job description and its relation to the on-call business. The idea is that the questions proceed somewhat logically, but in some interviews, the later questions are already discussed in the earlier stage of the interview. The number of questions differs in different interviews depending on the question pattern and the use of the time. In some cases where answers of the interviewee were long, the number of questions was below ten but when answers of the interviewee were short, the number of questions was up to 15. However, the most important question was prioritized, and the less important additional questions are asked after those. All of the interviews ended with the question about the other important factors, which were not discussed in a particular interview. Generally, this question does not bring clearly new factors to consider, but mainly summarizes the opinions of the interviewee. The interview number six was actually not an interview as it was for clarification of the invoicing codes in Austria. In addition, the interview 15 was more unstructured interview about future trends in the on-call business.

Table 2. Interviews of the thesis

Number of inter-view	Interviewee	Organization	Duration (min)
1	Manager, pricing	Central	21
2	Manager, contract management	Central	50
3	Director, service operations	Northern Europe	64
4	Director, Service Sales & operations	Central Europe	32
5	Manager, contracts sales	Central	42
6	Team leader, service support	Austria	19
7	Manager, operation excellence	Central	53
8	Operational excellence lead	Central, (Central Europe)	53
9	Manager, service operations	Finland	43
10	Business controller	Central	52
11	Manager, service	Germany	56
12	Business developer	Sweden	47
13	Operational excellence lead	Central (Northern Europe)	82
14	Manager, service sales development	Central	45
15	Manager, product portfolio	Central	54
16	Manager, field area	Austria	47

All the interviews were recorded because it enables to come back to the discussion later and helps to concentrate on the interview as there is no need to write all the answers down. The recordings are transcribed to the Google sheet according to the interview and the question because transcription is a very useful tool to make the processing of the recording easier (Ruusuvuori et al. 2010). The transcription is not done by word to word but rather to collect all the answers, which relate to the topic, as the amount of data is not so large that it requires any other exclusion at this point. Even though the interviews are done both in English and in Finnish, all of the interviews are transcribed into English to make them easier to handle.

Before the analysis, the qualitative data needs to be confined and categorized so that it helps to answer the research questions. Because of this, the actor and the research questions always define the findings of the research material. Even that these stages

require some level of analysis this the categorization or thematic analysis does not need the actual analysis, which can include analysis of the big picture, point of interest, individual exceptions or even all of these in the same study. (Ruusuvuori et al. 2010) The categorization is partially done so that it easy to analyze with the pricing process provided by literature. In this thesis, the categorization is done in the following way:

Table 3. Categorization of the quantitative analysis

Group	Issues
Objectives	Objectives of on-call pricing Objectives of the whole maintenance business
Cost	Labor cost Availability of technicians
Competition	Competitive situation Competitive advantages
Customer	Customer needs Customer agreements
Pricing structure	Factors that affects pricing Factors that should affect pricing
Pricing process	Pricing process at the moment
Communication	Finding the best solution to customer Justification of the prices to customer
Other	Other interesting factors

5. EMPIRICAL FINDINGS ON THE PRICING MODEL

5.1 Quantitative analysis and market characteristics

For understanding the potential of the services, it is important to look at the installed base information. The installed base information can be separated into the company's own machines and the third party machines, where the company has provided services previously. Sweden has the largest potential of services as they have a significant number of own machines but also a very large amount of third-party machines on the market. Germany has the largest amount of their own machines, but they lack in servicing third-party machines in the market. Even though Belgium has substantially fewer own machines than Austria, they have served a great number of third party machines in the field so that the total installed base is third largest within these frontlines.

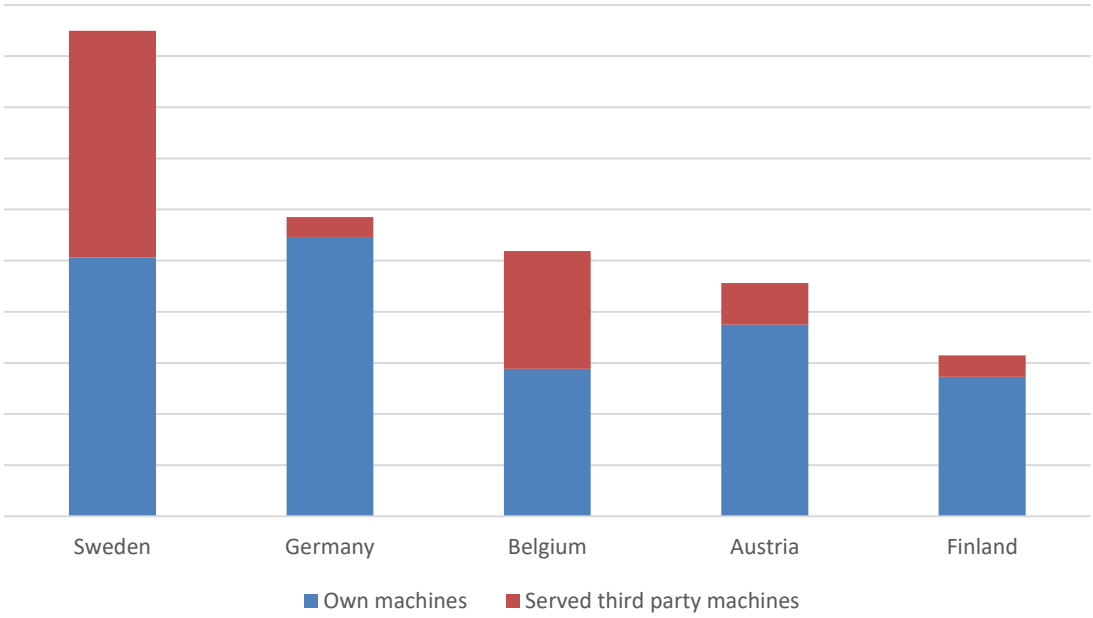

Figure 12. Installed base in different frontlines

In terms of revenue, there are three frontlines, which significantly generate more revenue in on-call business than others, which are Germany, Sweden, and Belgium (see figure 8). The other two frontlines that are included in this analysis are Finland and Austria, which both generate about a half much revenue than one of the other frontlines. However, all of these frontlines included the eight largest frontlines in terms of revenue in 2019 in on-call business. Even though Belgium had a substantially lower number of own

machines in the market, they have increased their sales probably through a large number of third party machines. This might indicate the relatively low prices in comparison to other global competitors. In addition, it looks that Sweden has not realized all the potential of a large number of third-party machines because the revenue is not substantially higher than other frontlines have. However, the size of the contract business might be the reason for these phenomena, which is examined later in this chapter.

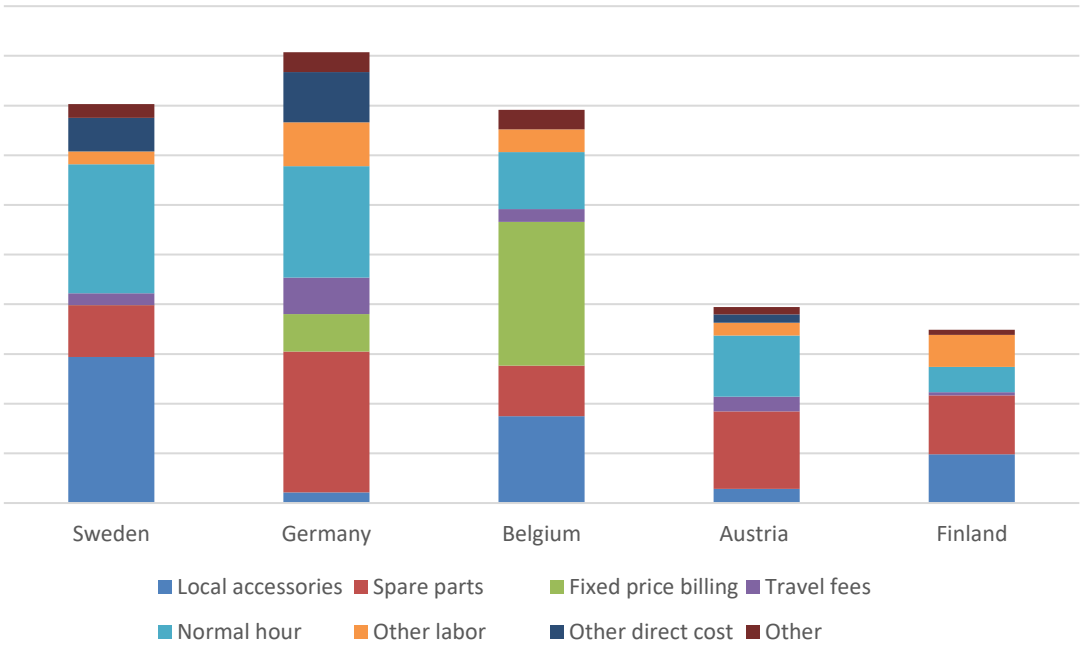

Figure 13. Distribution of the sales in different frontlines

As mentioned previously, the on-call business does not include only working hours, but also travel costs, spare parts, consumables, and other costs and charges. The local accessory is a very regularly used code in these frontlines as it has generated most of the revenue in Sweden and Finland and second most in Austria and Belgium. The basic explanation of these local accessories is all the commodities that are easier and faster to purchase from the local hardware store than in the central warehouse. However, Belgium uses this code for the maintenance of third-party machines to the customer, which could also be the case in Sweden. In addition, this code includes the labor and the cost of dealers in Austria.

As already stated, the on-call business includes also a significant number of spare parts especially in Germany and Finland where sales of spare parts account more than 30% of on-call business. These spare parts are usually purchased from the central organization, but some minority is also purchased directly from a local supplier. The frontlines in Sweden and Belgium do not probably generate that much sales through spare parts

because they serve a significant amount of third-party machines, which need their own spare parts, which are probably charged below the code of local accessories. The third important charge is fixed price billing, which is the most used code in Belgium representing more than one-third of their business. The reason for this code might be, for example, a machine refurbishment or project, where the price for the customer is fixed. Generally, this means some typical but larger job with a bundled price where the customer does not have the risk that it cost more than they expected.

Different kinds of travel costs are also quite regularly used. A fixed travel fee is very often used in all of these five frontlines but only Austria use also other codes regularly for other travel expenses and travel hours, which generate more revenue than fixed travel fees. The company has a framework called travel lump sum, which means a fixed price for travel to customer location, which is always the same to the same location. However, it looks that the frontline in Austria has not fully adopted this framework yet. However, normal working hour code generates most of the revenue in Germany and Austria, second most in Sweden and Finland and third most in Belgium, so it is a very widely used code for labor. This quantitative analysis concentrates more on the actual labor hours.

Analysis of different invoiced on-call prices in the few largest frontlines in terms of on-call business in the year 2019 raises several points that affect prices. At first, all of these frontlines use the normal working hour code most frequently in terms of labor hours. In these five frontlines, the price difference of the normal working hour is not that significant because all of these countries have quite high price rates. The cheapest frontline in terms of the average price of the normal working hour was about 20% lower than the most expensive frontline. In addition, the frontlines did not express a correlation that higher prices lead to less demand. The one interesting feature of the prices were the standard deviation of the normal working hour. In Sweden, the standard deviation is over 25€ when it is between five and ten euros in all other frontlines. This tells that pricing is the most dynamic in Sweden. However, it is important to note that the value exchange rate affects slightly to the EUR prices of Sweden as they use Swedish krona.

The second frequently used code has the description “work at a higher rate for customer” based on the company framework. However, in the system, this code has the description “Overtime hour A1” so the actual mean of this code is not clear. However, according to interviews, this code means overtime. Therefore, in overall it looks that the work that brings customer higher value through complex or high-end service is not priced higher in most of the cases.

In Sweden, Austria and Finland frontlines, the difference of the normal working hour and overtime code is significant as the price is about 30% in Finland and Austria and 38% higher in Sweden. In the other two frontlines, the difference is not significant as it was almost the same so the meaning of this code for those frontlines is not clear. However, it looks that the second overtime code represents the basic overtime to Belgium, but this is not regularly used in Germany. This overtime is about 52% more expensive than the normal working hour in Belgium. In Germany, the third overtime code, in turn, seems to represent the normal overtime, which is about 28% more expensive than the normal working hour. However, it is important to note that differences between these overtime prices may also be due to the different regulations in these countries, how overtime is paid to the technicians.

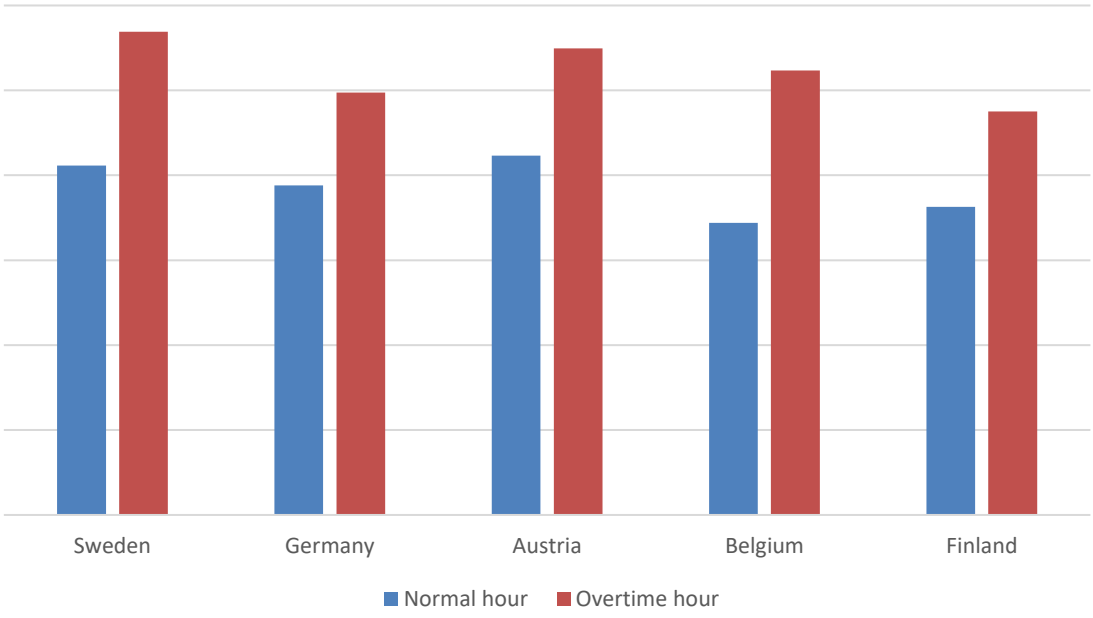

Figure 14. Normal and overtime hour prices in different frontlines

Another code that is regularly used in these frontlines has the description: “normal hour workshop, Monday – Friday.” The quantity of use of this code is much lower than the normal working hour, but the average number of hours when this code is used is much larger in many frontlines. In Austria and Belgium, the average number of hours of this code is over two times more than the normal working hour and in Germany, it is over ten times more. However, the use of this code varies much in different frontlines as in some cases the code is more expensive and in some cases, it is even cheaper than the normal

working hour. In the Sweden frontline, this code is almost four times more expensive than the normal working hour but in Belgium, it is only a 10% higher. In Germany and Austria this code, in turn, is even lower than the normal working hour and in the case of Austria, it is only about half of the price of the normal working hour. In Austria, this code means a price for the stationed technician in a larger customer field, who does not need to travel with a van and has a hundred percent utilization rate. Finland, in turn, does not actively use this code at all. This clearly indicates that frontlines use also this code differently and it means different works to different frontlines. However, the average number of hours could refer to, for example, a larger job, problem solving or project.

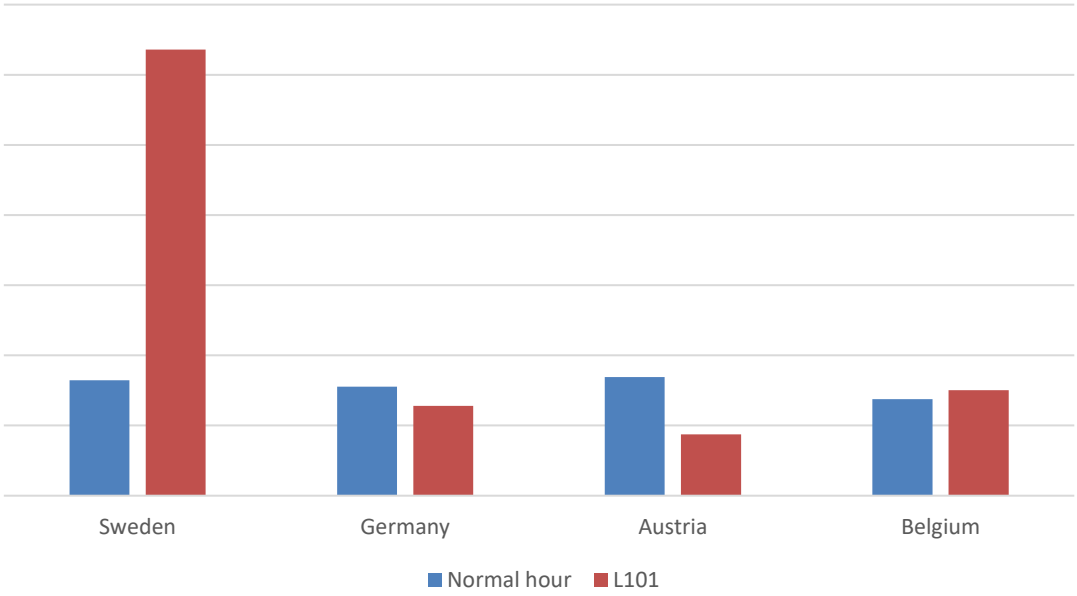

Figure 15. Normal and "Normal hour workshop" prices in different frontlines

One interesting point to compare is the price and the product line because different machines might need different competencies. However, in most frontline units there was no significant variation in the price of normal working hours in different product lines. The most significant variation comes from Sweden where the most expensive equipment category was about 50% more expensive than the cheapest one in terms of normal working hours. However, the cheapest and the most expensive product lines have a very small quantity of transactions. In addition, Germany has a little variation, as the most expensive equipment category is about 20% more expensive than the cheapest one. However, there is no clear equipment category, which is more expensive or cheaper than other categories are in all of these frontlines.

Figure 16. Variation of price per hour in different product lines in Sweden.

The next interesting field to analyze is the price for different customers. When comparing the normal working hour prices of different customers in Sweden (Red dots in the figure 17.), there were quite significant average price differences between different customers. The customer that has the highest average price paid over double than the customer that has the cheapest price. However, it is impossible to say with only quantitative data, how these works differ within different customers. In the other frontlines, this variation of prices was less. The frontline in Germany (Blue dots in the figure 17.) has some variation, as customers with the lowest price need to pay 30% less than most expensive prices. In other frontlines, like in Belgium (Violet dots in the figure 17.) and Austria (Green dots in the figure 17.) the variation is very small. Finland, in turn, does not have any dots in the following figure because it does not have any customer that has purchased normal working hour services ten or more times. The reason for this could be the other codes that Finland is using. In addition, there was no clear correlation between the volume of the purchase and the price for different customers. However, this data does not provide any info about the spare-part purchases and service contracts.

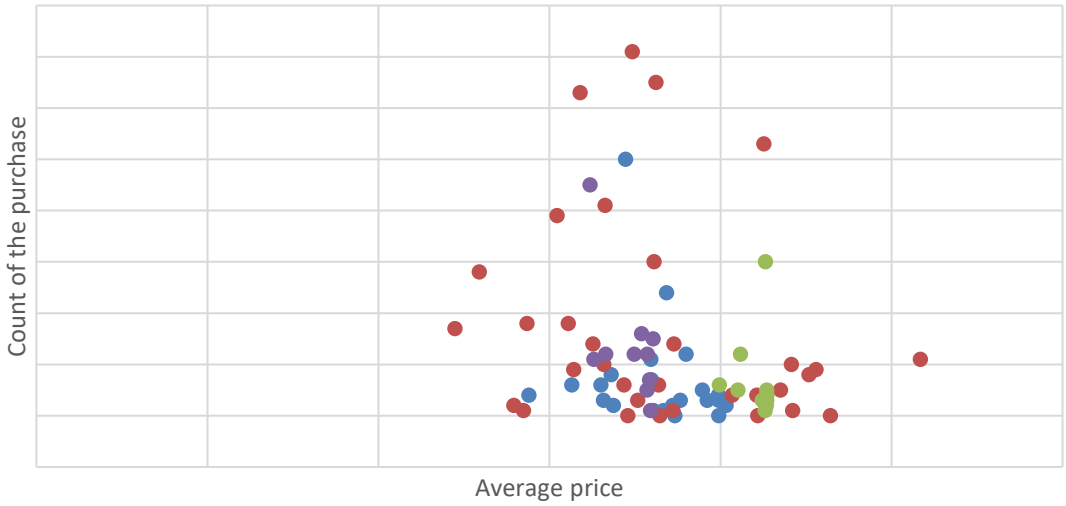

Figure 17. Pricing of different customer in different frontlines

It is also possible to compare the actual price of hours to the price list that frontlines have. With this comparison, one can find out that the actual price of the normal working hour in Sweden is over 30% below to the list price by assuming that the price of service technician represents the basic working hour. The reason for this is probably the discount that Sweden offers at least to their larger customer. If we look at what different customer pay on average, we noted that there is no customer that pays this list price if they have purchased normal working hours more than five times in Sweden. However, this difference is not that significant in other frontlines as the actual price is only below five percentages less than the list price. In Austria, the actual price was only about one percent less, which tells that they do not offer any discount easily.

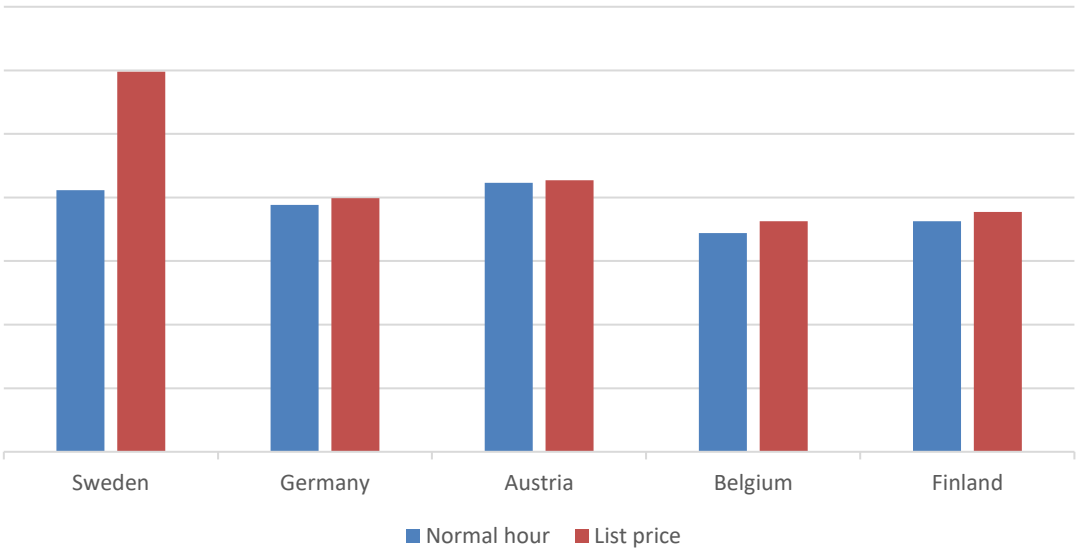

Figure 18. List price in different frontlines

The company also has target sales rates calculations that are based on the cost of the work. The direct cost of the labor varies slightly between different frontlines, as Austria has the highest direct cost and Sweden the lowest also because of the currency rate. In addition, the full service cost, which includes indirect multiplier and overhead burdens, varies quite significantly between different frontlines. For example, Austria attaches a relatively low number of indirect costs and overheads to the full service cost than the other four frontlines. In fact, it looks that Belgium and Finland attach even too much indirect cost and overheads to the full service cost as it passes the actual rate of the normal hour in on-call business even though those frontlines generate profit. However, more expensive working hours or additional charges may cover this gap and still generate revenue. In addition, every frontline has their own target margin, which creates the target price to the normal working hour. However, this target price is based on the gross margin to the direct cost and in most cases, it is not even enough to cover all of the indirect costs and overheads.

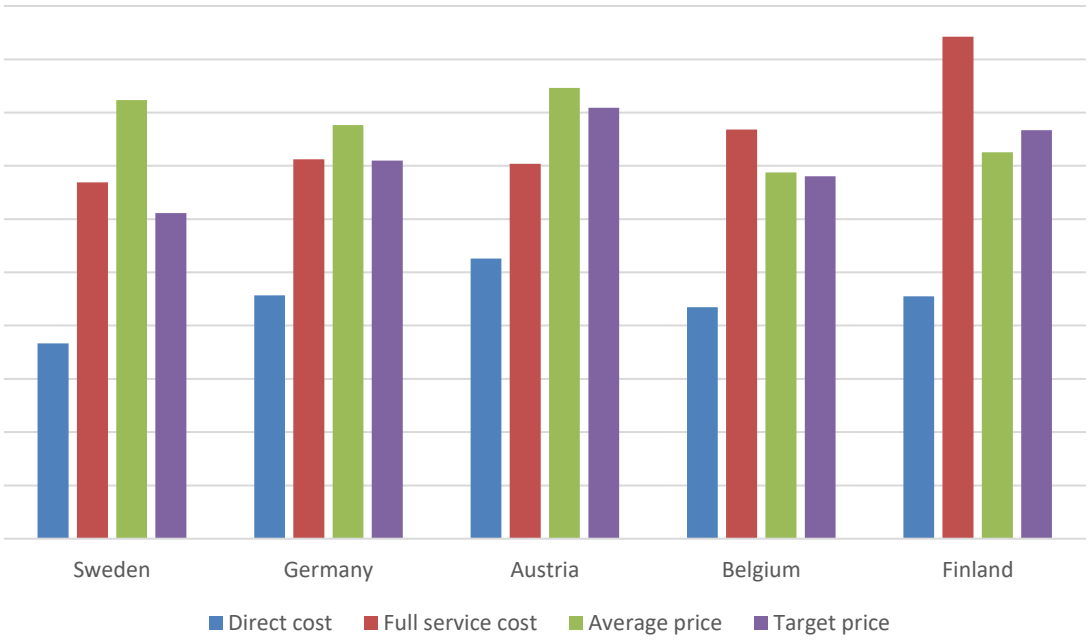

Figure 19. Target price calculation compared to actual rate

The working cost data also include some interesting factors as a variation of the labor costs. Almost all frontlines have some variation inside the labor cost, but Germany and Austria have a clear explanation to it. Germany has one different price to one cost center that is named after one company's complex machine. This quite clearly means that

maintenances of these more complex machines need more competencies and are then more costly to a company but perhaps brings also more value to the customer. However, there cannot be found any own separate charge to this kind of service. Austria, in turn, has two cost centers, which are mobile and stationed. The price difference between these is quite significant, but it is much less than the difference between the price of the normal hour and stationed hour. According to the invoicing data, the actual price that Austria got from the stationed technician does not even cover direct costs so either the direct cost calculation is not correct or it is not profitable.

From a financial point of view, there is a difference across different frontlines. Finland and Sweden have the highest operative profit margins in this group. As earlier stated, Sweden is also one of the largest frontlines in on-call business, so they have succeeded to gain market share in a profitable way. In turn, the lowest margin in this group is Austria, which also has the lowest revenue with Finland. However, the frontlines in Northern Europe have significantly higher operating profit than the frontlines in Central Europe.

In addition, one interesting aspect to point out is the share between on-call business and maintenance contracts. Even though Sweden has a significant share of on-call business, they have even a larger share of service contracts, which is also in the line with the service unit's strategic objectives. Thus, the revenue in contract business raises Sweden to the largest market of services if both on-call and contract business are taken into account. However, the profit of the contract side is not as high as the profit in the on-call business in Sweden and in Finland where service contract is a slightly smaller business than on-call in terms of revenue. In the three other frontlines, the situation is vice versa, as the contract business in these markets have higher profit than in on-call business. In Austria, the service contract business is slightly more than half of on-call business, in Germany, it is slightly less than half and in Belgium, it is even below 20% of the on-call business. The reason for the small size of the contract business in Belgium could be, for example, the low price level of the on-call business.

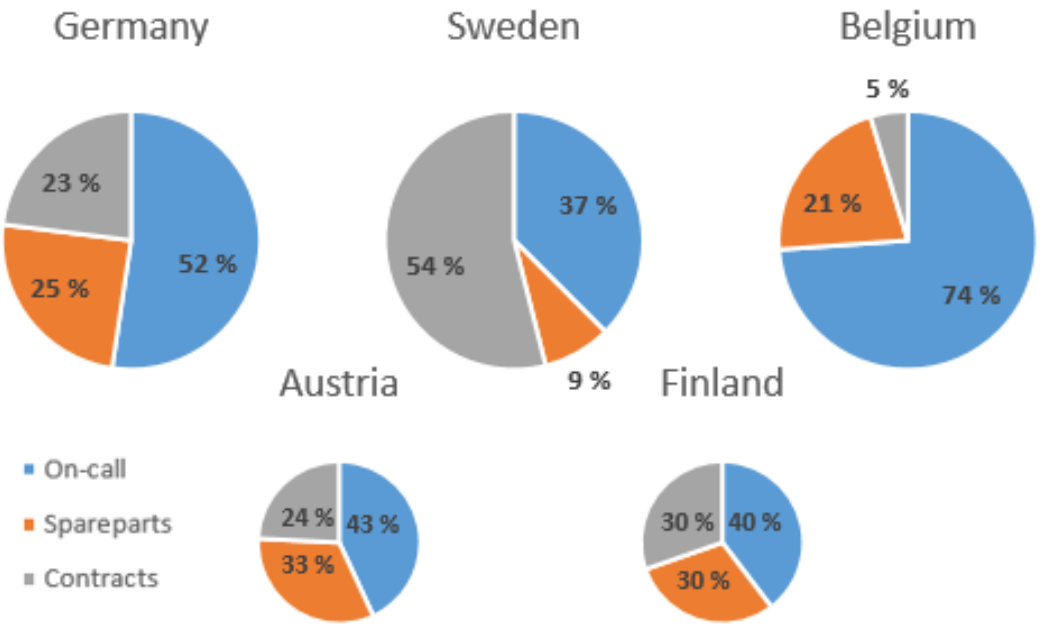

Figure 20. Share of sales in profit centers in different frontlines

One interesting part to evaluate is which factors might have an impact on the profitability of the on-call business. Although Central Europe has a low level of profit, Austria still has the highest average rate of the normal working hour and Germany the third highest rate in this group after Sweden. Thus, it looks that a higher price in the normal working hour does not drive profitability that much. In addition, another interesting factor is the pricing of overtime as both Austria and Germany charge relatively low on overtime when comparing to Sweden and Finland. However, this can be due to the different regulations of payment of overtime so that it is cost-based. In addition, the variation in prices of the normal working hour is higher in Sweden and Finland than in Germany and Austria. However, Belgium, in turn, has the lowest variation, but they have generated a higher operative profit margin than Germany and Austria. As already stated, Sweden usually offers significant discounts to their customer in relation to their list prices, while, for example, Austria offers very marginally of any discounts. This may prevent reaching the highest prices from the customer that does not purchase the service regularly. Furthermore, the profitability of contract business might also have an impact on the profitability of the on-call business as Northern Europe generates less profit from contract business than Central Europe.

The quantitative study raises the initial factors that affect pricing in on-call business. First, different markets have different prices, because every frontline has separately set their own price levels. However, different market aspects like competition, cost level, customer

price sensitivities affect or at least should affect price levels. In these five frontlines, the price difference was not that significant because the differences in cost of labor were not that substantial and all of these located quite near to each other.

The other factor that has an impact on prices was a time of action in terms of overtime. The reasons for price differences in overtime can be explained through costs, as the cost is more to the company when they need to operate with overtime. However, these five frontlines have some variation of the percentage that customer needs to pay more for overtime, so it is not necessarily solely based on cost. However, this needs to be investigated also with interviews to receive the opinions, is the overtime only cost-based or does it generate also value to the customer?

One of the clearest factors that affects pricing in on-call business is the customer. Although some frontlines do not have so clear variation of prices on different customers, many of them use, for example, fixed price billing very often. Some frontlines even have different codes for some of their largest customers. However, the customer specific factors that have an impact on the prices can be further investigated with the interviews.

5.2 Qualitative analysis

As stated earlier, the quantitative study concentrates more on the Northern and Central parts of Europe but the idea is to build the model that can be used wider. The quantitative analysis demonstrates that different markets have different characteristics, which is also mentioned in the interviews. For example, operational excellence lead, who has mainly worked with frontlines in Northern Europe, even mentioned that markets in Northern Europe are more matured than in Central Europe. The interviewer based this statement on the customer's willingness to outsource their actions and the price competition as it looks that price competition is more prominent in Central Europe. The service manager in Germany, for example, noted that they cannot always get their own price from the customer because of the market prices. Generally, most of the interviewees see the need to price the on-call business in a way, which is more systematic. However, most of these interviewees located in the central organization, but also in frontlines in Northern Europe. This might also indicate the maturity of the market as all of the interviewees in a central organization located in Northern Europe.

The current situation of the company's pricing can be evaluated with the pricing pyramid, which was presented in the literature part. The base of the pyramid is value creation.

Generally, the interviewees think that the company can create more value for their customers than, for example, their competitors and therefore it looks that the base is great. However, many frontlines have a very simple price structure as it generally takes only overtime and other cost-based factors like lower cost of stationed technicians into account and therefore not the perceived value of the customer. Thus, the poor pricing structure does not take the objectives and needs of the different customer segments into account. In addition, some of the frontlines have flat rate prices to some of the maintenances but others calculate those always a case by case. Therefore, there is a need for the more systematic pricing structure, which we are going to form in this chapter.

Interviewees also noted the issues relating to the communication of the value. The service director in Central Europe, for example, noted that the customer usually accepts the price when the company justifies the value, for example, through the availability of the customer's machine. Therefore, the communication of the value works well at least in some cases, but this might not be the case in all of the frontlines. In addition, the company does not have a global pricing policy as the frontlines more or less decide their own price levels, which vary in different frontlines. For instance, some of the frontlines give discounts to their customers, but there is usually a lack of policy when they should give those and when not. Therefore, the company should also need a consistent global pricing policy so that the frontlines do not give the profits away without a valid reason.

5.2.1 Objectives of the pricing model

As we revealed in the literature part, the pricing process should start from the pricing objectives. The direct question of pricing objectives is not asked in every interview but almost every interviews include some aspect that relates to it. Generally, interviewees think that both profitability and market share are important so that on-call business need to get market share in a profitable way. Therefore, the opinion of the business is not just additional business for the product business so the potential of manufacturers' service business seems to be understood in the company. However, it seems that the frontlines in Central Europe feel that the central organization expects more profit from them. The service manager in Germany, for example, argued that they need to be secure with price increases or the customer will change the service provider. Therefore, the objectives of frontlines in Central Europe are probably more based on to retain the customer and market share as it seems to be a market that is more competitive. In addition, some interviewees and especially service contract managers in the central organization raise that the objectives depend on the competition and cost structure in the market and the importance of the customer. Furthermore, the operation excellence lead suggests that

frontlines should evaluate depending on the customer, should they seek more revenue or just maximize the profit. Therefore, the content of the objectives relates mainly to the market share and profitability but depends on the market and customer.

The desired level of attainment how company wants to achieve their objectives seem to be both the maximum and satisficing results. With profit, the level of attainment seems to be more satisfy based as, for example, the service manager in Finland noted that they do not want to overcharge the customer. In addition, the service manager in Germany noted that they have to be secure with the profit that they take through pricing. However, the level of attainment of the objectives that relate to market share depends on the market. The frontline in Sweden, for example, tries to constantly seek new business opportunities and offer services also to the third-party when frontlines in Central Europe concentrates mainly only to their own machines. Therefore, the frontlines in Northern Europe seek more maximum results with market share when Central Europe settles for satisficing results. This indicates that market characteristics have an impact on objectives of pricing even though it should lead to better profits in the long term.

Most of the interviewees seem to see the company as a premium brand in the market. However, some interviewees in frontlines noted that some of the customers might not see this and the company needs sometimes to justify the prices to the customers. Therefore, the company seems to have the thriver position in the pricing strategy where the perceived benefits are high, but the price is on medium level in many markets. However, as the company and at least some of the customers see the company as a premium brand there is no necessary need to cut prices so the effective pricing strategy does not seem a suitable option for the company. Despite this, the relationship seems to be a great solution to the company as we stated earlier.

To prevent the sub optimization of on-call business, the pricing process should take wider strategical perspective to whole maintenance business in account. Many interviewees in frontlines and central organization emphasize that on-call business and contract business cannot be evaluated separately but rather look at the whole maintenance business. Indeed, many of the interviewees, especially in frontlines, keep the on-call business just a way how the company invoice the customer and therefore the meaning of the on-call business is just all services that are not invoiced below service contracts.

The company has an objective to get more maintenances under contracts as it is more predictable for the company and it commits the customer through better relationships. Therefore, this supports the relationship pricing strategy, which we presented previously.

However, it is also noted that in some market areas as Northern Europe, the contract business is not that profitable as on-call business as we illustrated in quantitative analysis. Thus, the object of the contact business could be something else than bringing the profit as it might bring other benefits as a better relationship with the customer, which may also bring more business to the on-call business. Operation excellence lead, which worked with frontlines in Northern Europe, noted in the interviews that the customers, which have a contract in Sweden, generate also the most of the revenues to on-call business in Sweden. Thus, the interviewees who are located in frontlines in Northern Europe also emphasized that they always try to get at least some level of the contract with the customer for enabling the business in the future. Similarly, the service director of Northern Europe mentioned that preventive maintenance could play a role in the ticket for future business even though it can be done under the contracts or on-call business. Therefore, the pricing strategy seems to have an impact on the objective of pricing, as Northern Europe seems to seek market share from contract and profitability from the on-call business. On the contrary, Central Europe have not get that many contracts and profit from on-call business than Northern Europe and the interviewees did not emphasize this kind of relationship strategy.

The fact that pricing is a powerful tool for heading the business to the desired direction came up in a few interviews in the central organization. In terms of objectives, the pricing of on-call business needs to encourage customers to the contract business, as the company's objective is to get more customers under contract. This leads to a situation where the price of the on-call business needs to be relatively more expensive for the customer than a contract, which is suggested in several interviews. The other reasons for this were the higher administrative cost of on-call business and the risk that the customer changes the supplier mentioned by a few interviewees in the central organization. However, contract managers also noted that the company should be able to price the operational risk of contracts. Notwithstanding, this model allows also larger customers to use mainly on-call business if they want to pay slightly more than in contract business. Therefore, this model enables the company to get also better profitability from on-call business when increasing the level of service contracts.

However, interviewees raised several factors that have an impact on the customer's unwillingness to get a contract and using on-call business. The most common factor according to interview was customer own workshop, which they use for daily preventive maintenance tasks and easy corrective maintenance tasks. Secondly, the customer might want to retain the flexibility to use different suppliers for the maintenance of their

machines and not want to be dependent on the company. In addition, these customers might be able to take operational risk themselves because of the quality of the machine. Furthermore, some customers try to seek cost savings through competing a supplier in case of need and accept the risk of breakdowns. However, as stated in one interview, these customers might not see the cost of planning and administrative costs that it brings to the customer. In addition, the company knows its own machines best and know when and which kind of maintenances the machine requires. In some areas, the customer might also not be aware of the benefits, because the sales force does not try to sell the contracts actively, which can be due to their view of the business.

The other aspect of the business model in on-call business is the parts in the on-call business as according to one interview it represents roughly 40 percent of the revenue in on-call business. According to interviews, Sweden, for example, might sometimes give lower hourly rates for the customer for seeking a higher margin from the part that they use. However, a few interviewees in central organization and in Central Europe noted that the part business is usually more price sensitive part of the maintenance business than hourly rates because it is harder to justify the differentiation factors with parts than works. However, this is in variance to the fact that part business in more profitable in the company. This might indicate the opinion that the part business is the main service business and on-call maintenance just add-on to that.

5.2.2 Assessing the key determinants

The next step in the pricing process is to define the key determinant of the pricing decision, which were the company, customer and competitors. The costs are determinant, which mainly affects the prices of the company as the pricing of hourly rates is done with cost-plus method. As mentioned previously, these direct costs have an impact on the prices of hourly rates as some more expensive technicians cost more for the customer and stationed cost less as they do not need to travel and have a higher utilization rate. In addition, the cost of overtime causes higher prices to the customer. Furthermore, many of the frontlines charge some emergency fee from the customer if they call them for the need to repair their machine outside of business hours. This fee also relates to cost, as the company needs to have duty technicians, which also cannot work the next day if he/she needs to work late at night. However, the cost that does not affect prices currently is the rescheduling of the technicians inside the business hours, which may be needed when customers have an urgent need. Furthermore, interviewees in the operational side of the central organization mentioned that corrective maintenances usually

add more cost, because they require more planning and administrative work than preventive maintenances. In addition, the company might have trained some special skills some of their technicians but have not charged these special works differently. Some of the dispatchers and technicians might also help some customers through the phone to solve their problems without any charges.

As earlier stated, the target prices provided by cost calculations are not set to the right level in all of the frontlines, as it does not cover even the direct costs in some cases. In addition to this, different frontlines seem to have a different habit for calculating their cost even though the company has set the framework for calculations. Furthermore, one interviewer in Central Europe noted in the one interview that the company system does not calculate directs cost to stationed technician correctly as the frontline stated that according to their own calculation, the cost is about half of the cost of a normal technician. Therefore, there is a need to ensure that the cost calculations are ate the right level because otherwise, the frontlines cannot utilize those.

As illustrated in the quantitative part of the study, most of the frontlines does not use the target price calculations as setting the price, so the prices are not purely cost-based. The business controller of the company stated that in the optimal case, the frontlines could use the target price as a list price so that the cost calculation works as an answer machine. However, she also mentioned that usually there are different factors that prevent to do it so the cost calculation works more as a learning machine. However, in value-based view the cost calculation should not set the target but rather provide the price floor to the prices so it should represent a learning machine. Thus, frontlines can ensure that the price covers all the costs on average and know how much they are able to reduce the price for getting some other benefits and still cover the direct costs. Therefore, CVP-analysis can be a useful tool for price setting.

The main analysis for setting the value-based prices is to assess the economic value analysis, which starts by identifying the reference service of the customers. This always depends on the customer, but according to interviews, the reference service could be divided roughly to the customer’s own workshop, small local competitor or global competitor. However, the prices of these are in some cases hard to define, but every frontline has some estimates of prices of their competitors. In addition, different local competitors have different competencies and probably different price levels.

The next step of economic value analysis is to segment the market depending on the value, which they get from the reference product. Different service managers in frontlines

emphasized how different customers have different maintenance needs. The first segment could be a customer that rarely uses the company's service, as they only need them in complex cases a few times in the year. These customers most likely have their own workshop or use small local competitors for doing simple maintenance but are probably not able to do the complex tasks. In this light, the reference service is the service from the more expensive high-quality service provider. The second segment could include customers that use only on-call business, but also order preventive maintenance from the company from time to time but do not have a service contract. The preventive maintenance is usually a simpler task than corrective maintenances and therefore cheaper local competitors or company own workshop might also be capable to do it somehow. The third segment has a service contract for maintenance but uses on-call business for corrective maintenances and other additional features. In this segment, the service contract includes basic preventive maintenance but could include also more value-added characteristics like maintenance planning. However, corrective maintenances and additional services outside the contract are usually more complex than preventive maintenances so the reference service is most likely the high-quality service by global competitor or other high-quality service provider. The last segment has the stationed technician on site, but they do not have a contract. In the light of preventive maintenance, these the reference service could be again the customer own workshop or local competitor, but when it comes the corrective maintenances, it usually needs more competencies so the reference price is higher.

Table 4. Customer segments in On-call business

	Segment 1.	***Segment 2.***	***Segment 3.***	***Segment 4.***
Preventive maintenance	Own workshop/ local competitor	On-call services from the company	Service contract	Stationed technician
Corrective maintenance	On-call services for complex tasks	On-call services from the company	On-call services from the company	Stationed technician
Value of reference offering	High	Low/High	High	Moderate/High

The next step in the economic value analysis is to determine the differentiation factors and values that the company's service provides in relation to the reference product. The OEM status came up in several interviews especially in a central organization as the company has the best knowledge and capabilities to do maintenance on their machines. Secondly, many interviewers, especially in central organization, brought up the wide network and availability of the service, which also enables to be fast on the customer site, which is crucial in urgent cases. The one aspect, which especially interviewees in frontlines in emphasize, was the reliable partner to the customer who can fulfill all of the customer needs, which also supports relationship-pricing strategy. The other differentiation factors that came up in the interviews were quality of the service, educated and skillful technicians, efficient way of working, easy access to data, technical support, additional features like customer portals, image, and safety issues. However, it is important to note that, for example, the competencies of technicians do not bring that much differentiation value to the customer in the easy tasks that customer needs. By this light, the differentiation value of preventive maintenance tasks is not that significant than in corrective maintenance tasks, where also availability, knowledge of the machine, efficient way of working, technical support bring substantially more value. These operational drivers have an impact on the customer strategic drivers as the company can then repair

machine faster and sustainable, which decrease the time of machine downtime, which, in turn, decrease the customer cost and therefore increase the value to the customer.

The fifth step in economic value analysis is to sum the reference value and differentiation value to get the actual total economic price to the offering. As we stated, basic preventive maintenance has lower reference value but also lower differentiation value so the total economic value is lower than in the case of corrective maintenances. In addition, different factors like, for example, the urgency of need have an impact on the customer's perceived value. Because of this, the price needs to be discriminated so that it reflects the value of the different need of the customer and that is the reason why the company needs the price structure.

The third analysis in the pricing process is competition analysis. As earlier stated, the competition situation differs from different countries according to the interviews. For instance, the frontline in Finland is able to increase their prices when Germany needs to be very careful about charging too much so that the customer does not switch the service provider according to interviews. Furthermore, almost all of the regions have both local and global competitors. However, many interviewers in the central organization noted that the company should compare themselves to global competitors as a comparison to local competitors may lead discounts.

For the basic preventive maintenance tasks, the threat of new entrants and other competitors is larger as it does not require so much knowledge of the machines than more complex maintenances. However, the threat is generally much weaker to the corrective maintenances as it requires knowledge of the machine. However, the lack of competitive information is noted in a few interviews in frontlines in Northern Europe where the competition generally seems to be less. Furthermore, different interviewees seem to have a different understanding of what the competitors are capable to do and what not. Operation excellence lead, who worked with Central Europe, for example, thinks that other competitors can do almost all the same work as case company whilst service director in Central Europe thinks that local competitors can only do the easiest task and it is dangerous to the customer. However, some of the interviewees note that some of the local competitors are more competitive and have more capabilities. Therefore, the capabilities of the competitors or at least the opinions of the capabilities differ inside the organization.

5.2.3 Forming the pricing structure

One of the company's competitive advantages against their competitors is their skillful technicians, so they pay significant attention to the training of technicians. Most of the interviewees in frontlines told that most of the technicians have the same knowledge and all of the technicians are able to perform most of the tasks. However, some of the technicians also have some special competencies, for example, electricity, climate, fire protection, welding, and programming. Especially in Sweden, a significant variety of third-party machines also requires some additional competencies. In addition, the frontline in Germany has lower rate fitters for easier tasks and engineers for the most complex tasks. In addition, some frontlines may have lead service technicians, which are in contact with the customer and distribute the work to other technicians on the same site.

Currently, frontlines have only a few works that are charged differently. As earlier stated, the frontline in Germany has a lower rate for fitters and a higher rate for the engineer. However, according to invoicing data and interviews, those are not so regularly charged. In addition, Austria has a slightly higher rate for mobile welding and drilling technicians because they need machines for the purpose. Furthermore, the frontline in Finland has a different price for workshop work, as there is a need to allocate the more fixed cost of the infrastructure. Therefore, most of the differences in the prices are based on the cost, but some of those also indicate the increased value to the customer.

The question about the different competencies of on-call business and possibility to charge from more value-added tasks were asked from interviewees and almost all of the interviewees are at least partially think that it is a good idea. As we noted earlier, the preventive maintenance tasks are the works that also cheap local competitors can at least somehow manage, so those need to have a basic price level. Service director in Northern Europe mentioned in the interview that preventive maintenance is usually the first step in the customer path and therefore it needs to be relatively cheap in some cases for getting the deal. He also mentioned that if the customer purchases the preventive maintenances from the company, they most likely purchase other maintenances and works as well. Furthermore, the product portfolio manager noted that preventive maintenance is usually more predictable and systematic so the company can utilize its "mass process" to do it more efficiently.

The next price level should be for corrective maintenances that usually require more knowledge about the machine to find the trouble and fix efficiently, safely and reliably.

There are probably competitors that could also do these jobs, but the differentiation factors of the company have more impact on it so that they can no execute the job as effective and reliable than the company. However, the costs of corrective maintenances are usually higher than preventive maintenance because of troubleshooting and unpredictability. The third price level can be for even more complex tasks, which require some special competencies, such as climate, fire protection, license for high voltage, or some otherwise some higher educated person. There are most likely very few competitors than can execute the most complex task to the company's machines and if they do, they probably need more time or have a higher rate, which includes the risk. These special works usually require special training or highly educated people and therefore they are usually more expensive for the company. It could be possible to have even more price levels like the different level for engineer work and other special work, but adding more price levels always increase the complexity to administrative work, which is mentioned in a few interviewees in frontlines.

Table 5. Value and cost of different levels of work

	Preventive maintenance	***Corrective maintenance***	***Special maintenance***
Reference offering	Own workshop/local competitors	A few local and global competitors	Very few competitor
Reference value	Low	Moderate	High
Differentiation value	Low/Moderate	High	High
Costs	Low	Moderate (trouble shooting, schedule changes)	High (special trainings and licenses)

Another possibility to charge from the customer is based on the capabilities of the technicians or other employees, which comes to the customer view. However, as it is noted in a few interviews in the operational side of the central organization, that the customer may not be willing to pay more for a more skilled technician if he/she does not do the more complex task were the additional capabilities are needed. Therefore, the pricing based on the level of the technician does not reflect the perceived value of the customer. The other pricing dynamic might be charging the different hourly rates from different machines. However, this seems to be a very complex task as the variety of machines is very high especially in the market where the company maintains also third party machines. The frontline in Germany is the only frontline in this group that has a higher price for one large and complex machine. However, charging a higher fees for the more complex machines does not reflect the value to the customer if the work is not complex and therefore assessing the complexity of the work is needed. Furthermore, one interviewee in Sweden noted that a customer might be reluctant to pay the higher rate for a more complex machine as they know that the company should know how to repair their own machines and does not need external training. Therefore, the pricing structure should base the complexity of work rather than the complexity of the machine or skills of technicians.

Another differentiation factor that is already in use in these countries is overtime. According to the interviews, the overtime is not just a cost-based charge because it also brings value to the customer in some cases. Many interviewees, for example, noted that the customer is willing to pay more on overtime when a technician can finish the job on the same visit and does not need to travel back home between days. In addition, some customers do not want any maintenance in normal business hours so that they can utilize all of their machines when they need those and when it does not harm their operations. In this light, there is a reason to charge more on overtime and it should generate the same margin than a normal hours. In addition, some of the interviewees noted that customer, which thinks that overtime is too expensive for them to refuse the company to come to overtime at all. Therefore, the customer usually values the overtime more, when they do not refuse it.

The third factor that can be charged at least in some markets is the urgent fee. Currently, the company plans preventive maintenances ahead but needs to reschedule the technicians regularly because of the customer urgent needs. The urgent fee is based on the value that the customer gets when the technician is fast on site when the customer has a machine down case or otherwise very urgent need. The interviewees in the central

organization and Northern Europe think that an urgent fee is a great idea as the customers are usually willing to pay more in an urgent situation. In addition, these urgent cases always require some kind of rescheduling and allocating, which need resources and affect the costs of the company. Furthermore, the urgent need may prevent to plan several customer meetings in the same trip, which may be important in Northern Europe where the distances are long. However, interviewees in Central Europe were generally more skeptical about the fee. For example, the service manager in Germany thinks that it is not possible in their market, as customer requires them to be on the customer site immediately without any urgent fees. However, the portfolio manager noted the aspect that even that some customer is not willing to pay an urgent fee, the customer may see the value of it better, if they noted that it costs normally. Furthermore, another interviewee in Central Europe noted that some of the customers might have the contract with reaction time, so the company needs to prioritize that they are able to answer their needs.

As stated earlier, some customers usually want rather fixed prices rather than pay based on hours as they probably want to bid the different suppliers or otherwise to be sure what the service will cost. Some customers, in turn, might want to split the service offering totally. The need to bundle some services together for offering the flat rate maintenance and productize the services is suggested in a few interviews especially in the central organization. In addition, some frontlines have the list price for different predictive maintenances, as they know which parts are needed and how long it generally takes. Therefore, it is useful to offer bundled packages to the preventive maintenance task, as it is also line with relationship pricing strategy as service contracts. In addition to this, some typical corrective maintenances might be possible to offer as a bundled package, which makes the selling of them easier and enable the company to benefit from the efficiency of the work and standardized processes. Furthermore, the bundled packages enable flat rate pricing which decreases the uncertainty of cost to the customer, which might increase their willingness to pay. Therefore, the bundled packages support also satisfaction-pricing strategy. Moreover, it may prevent the compensation of hourly rates with cheap local competitors, as the price difference is not probably that large with bundles. However, one interviewee in Central Europe noted that the infrastructure of the customer might have an impact on time what is needed for the job, which affects to cost of the service. Notwithstanding, a few interviewees in the central organization noted that if the volume is high enough, it will cover the exception. In addition, the product portfolio manager noted that the company's "mass-process" might also decrease the cost of the service with the bundles.

The one aspect that is already noted in the interviews was the consulting and diagnosing of the customer problem by phone or on site. The company does not charge from calls even though the customer can fix the problem without the technician and therefore the company does not get any profit from it. According to some interviewees in the central organization, there might be also cases, where the company does not charge the customer from the troubleshooting of the machine. Therefore, some of the interviewees in the central organization and frontlines think that it might be good to have some kind of fee. However, it is also noted that charging from the calls might be too difficult to justify to the customer and it may prevent the customer to ask help, which might harm the sales. Therefore, it seems to be too risky to add this charge to the pricing model.

The one aspect that especially interviewees in Central Europe raises was that the pricing model should not be too complicated as it then increases the complexity to the back office, which increases the cost. The complexity of administration in different levels of work is noted from frontlines in Germany and Austria. The most significant problem with this is the fact that the company does not exactly know, which kind of competencies they will need for repairing the customer's machine. For example, the technician might need to repair the electric problem if the technician finds this problem during basic maintenance. Thus, the company needs to define two different hourly rates or bundled price for the same technician in same visit, which might be complex but also be hard to explain to the customer. This creates the problem of charging for more expensive hours without clear documentation of the work categories.

5.2.4 Forming the pricing policy

Most of the factors that affect the prices in on-call business are somehow based on cost as already noted in the quantitative analysis. However, as we illustrated earlier the customer also has an impact on the prices at least in some frontlines. The different frontlines have different habits for giving discounts to their customers. As stated in the quantitative analysis, the frontline in Sweden has very high list prices but they give discounts to their customers for valid reasons. In addition, the frontline in Germany gives discounts to hour rates to their larger contract customer as other competitors do the same action in the market. Furthermore, Germany has to give discounts to the customer, which are located in the Eastern part of Germany, as the price level is much lower there. However, Austria, for example, does not give discounts for normal mobile service technicians at all. According to interviews, the customers are usually willing to pay the high normal rate and therefore it is not a problem to keep up the list price. However, as mentioned earlier, this

may prevent to get higher prices from customers, who are willing to pay more. Furthermore, the same rate does not encourage customers to have more business with the company, if they cannot get discounts. However, a few interviewees in Central Europe noted that discounting adds complexity to administrate.

Some of the interviewees in the central organization argued that the company should have a systematic and clear pricing policy for discounts so that it prevents an unprofitable agreement with the customer. Especially, interviewees in Sweden raised a few customer-related factors, which have an impact on the prices of them. At first, the pricing structure of how the company charges the customer for different works affects prices as some customers might have fixed prices for different works. In addition to this, the different agreements with customers affect the prices of different contracts as some requirements to availability and response time may require more resources and increased risks. However, these contracts may also have an impact on hourly rates of on-call business as some frontlines like Sweden might give discounts for those based on volume and relationship. In addition, the importance or potential of the customer affects prices, as there is sometimes a need to give lower prices for potential customers for getting more business in the future. Notwithstanding, the pricing policy should give frontlines a tool to modify the pricing structure to their market characteristics by giving discounts to some customer for some service elements which are hard to charge in the market. However, the price discounts should always lead to the other benefits to the company so that the long-term profitability is the same or even better for the company. Therefore, the frontlines can partially utilize, for example, the CVP-analysis and other cost information to determine the number of discounts.

5.2.5 Communication and implementation

According to interviews, the industry is quite competitive and price sensitive, but as we mentioned, it is more price sensitive to parts than maintenances. Generally, the company does not seem to have any specific activities on how they try to decrease the price sensitivity of customers. However, as the company communicates the differentiation factors to the customers, they communicate that the customer cannot compare themselves to the small local competitors and therefore increase the value of perceived substitute. As earlier stated, some of the frontlines also justify the price by important end benefits, for example, the availability of the machines. In addition, interviewees in Northern Europe especially emphasized the close relationship and regular contact with customers as a factor to commit the customer as it shows to the customer that the company is taking care of them, which engages the customer to the relationship. Furthermore, the service

manager in Germany noted that larger customers are usually more sensitive to other issues as safety and ethical issues. Therefore, the way of communicating the prices to the customer seems to affect their willingness to pay for those.

Generally, it looks that at least some of the frontlines have a quite good price getting capabilities. Especially service director in Northern Europe emphasizes the discussion of prices with the customer for seeking a better option to the customer if they are unsatisfied with prices. The customer could, for example, have lower hourly rates if they use more of the company's services so the discounting may also lead to more business. Although that frontline in Sweden gives discounts to the customer, it does not mean that they have weak price getting capabilities as most of the cases they seek some benefits from the discounts. Overall, the price getting capabilities are somewhere between high and medium but the price setting is lacking behind as it is based on cost and competition. Therefore, the company should consider the value-based price for moving their zone of pricing closer to the pricing power zone.

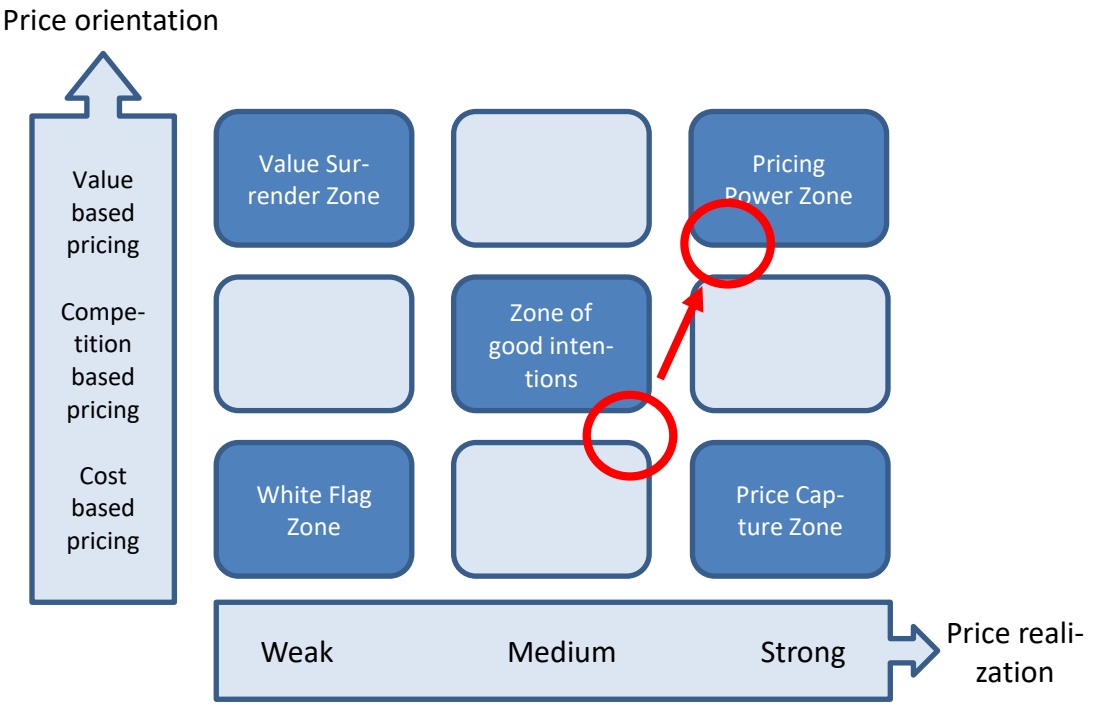

Figure 21.Change of zone of pricing provided by (Hinterhuber and Liozu 2012)

The last part of the pricing process is implementing price changes. As the company's frontlines have previously operated the on-call business quite independent, they have the best knowledge of the prices in their market. Because of this, the pricing model should not force the frontlines to the actual price level, but rather give the framework where the frontlines can adjust their prices. Thus, the central organization can cooperate

with frontlines' sales executives, which considers both global and local needs, which seem to have different characteristics. However, because of the nature of the B2B segment, it might be almost impossible to calculate the exact economic value to the different offerings so the frontlines need to estimate the value differences against competitors. Operation excellence lead, who has worked with Central Europe, for example, thinks that the company cannot charge a much higher rate than local competitors, whilst in contract service director in Central Europe suggests that the company needs to be at least 30% more expensive than them. The company could, for example, at the beginning use different gross margins to indicate the value differences of the different offerings, but later determine the price based on the differentiate values.

The implementing of the new model also requires the categorization of different work. In this case, technicians and dispatchers represent the sales force and therefore the categorization and actual implementation of pricing is left to them. Furthermore, this may require more selling capabilities to dispatchers and technicians as they need to communicate and justify the different pricing to the customer if the work is more complex or urgent. In addition, a few interviewees in the central organization note the aspect that dispatchers and technicians need to be active in selling the work to the customer and justify different pricing. Thus, the company can also converge commercial and technical people.

The other suggestions that come from the interviews relate to the selling of services to the customer. Several interviewees in the central organization emphasize proactive selling to the customer, for example, by using installed base data or when the technicians visit the customer. In addition, the portfolio manager noted that each element of the service portfolio should promote to each other so that the on-call business promotes the contract business when it also promotes additional service in the on-call business. Furthermore, operational excellence lead suggested that the company should concentrate on a holistic offering by providing more services to third-party machines also outside Northern Europe to becoming a high-quality service provider. However, the serving third party may also support sales of third-party products, which are noted by the service manager in Finland. In addition, the service director in Central Europe emphasized that service sales and solution/product sales need to cooperate more so that customer sees those as the same provider.

6. DISCUSSION AND REFLECTIONS

6.1 Characteristics of the pricing model

The qualitative analysis brought up the company's need for pricing structure and policy. Figure 22 demonstrates how the actual pricing model is built. The market characteristics like competition, the maturity of the market and installed base have an impact on the objectives of on-call business and contract business. However, the company have the objective to get more customers under contracts, so the company should price those relatively lower than on-call business. Therefore, the objective of contract business is to get market share through relationship pricing strategy when the objective of the on-call business is to create a profit. Although the contract business should have the same or even lower gross margin than preventive maintenance in on-call business, it probably still generates more operating profit because of the low level of indirect costs. In turn, the analyses of the key determinants found out that complexity of work, the urgency of need and direct cost should affect the prices. Therefore, the price structure is built so, that it takes all of these factors into account.

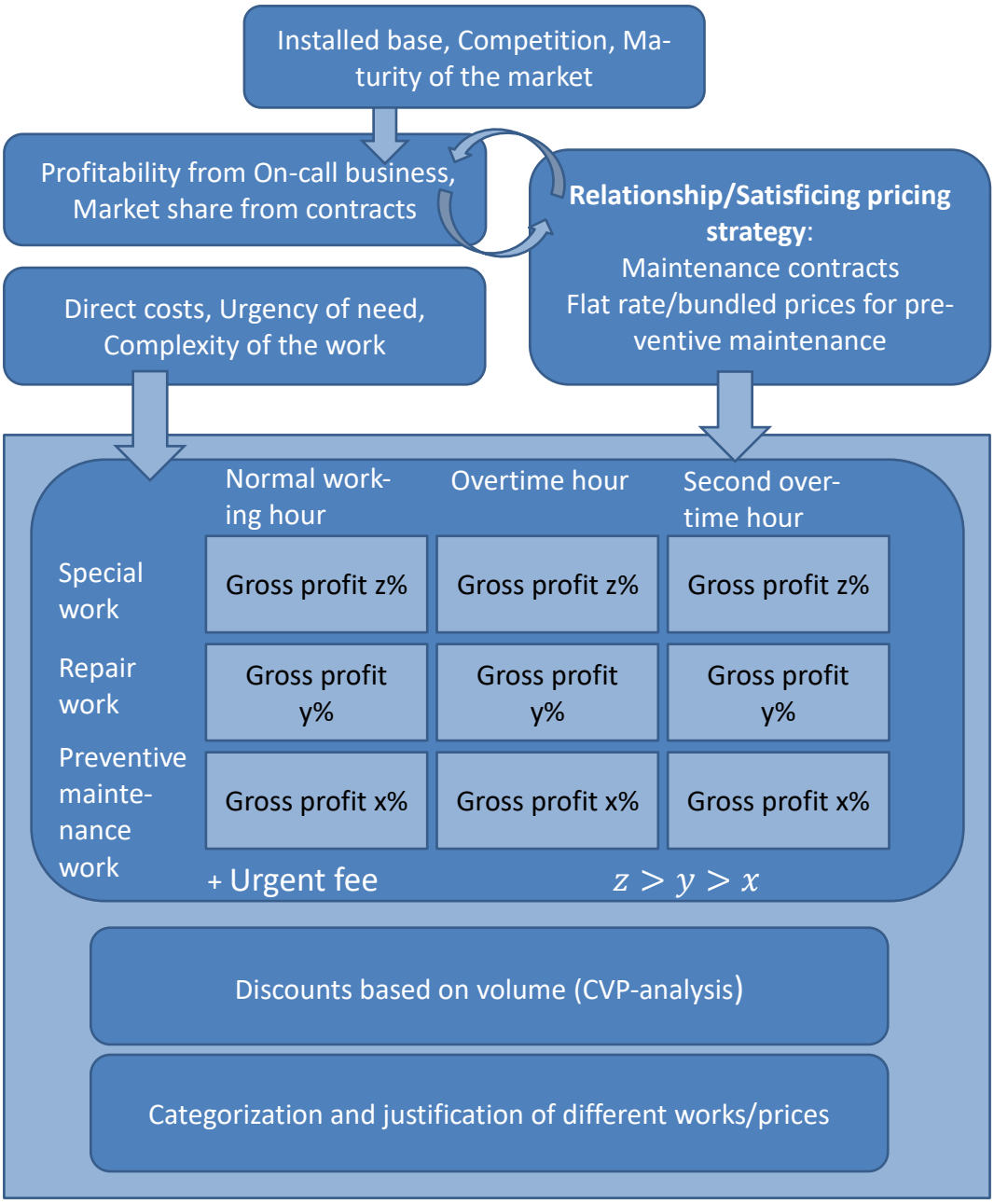

Figure 22. Pricing model of the thesis

At the beginning of implementing the actual pricing model, the company should make a separation between preventive maintenance and corrective maintenance, because as we verified previously, the corrective maintenance usually brings more value to the customer than preventive maintenance. By identifying the amount of preventive and corrective maintenance, the company can see the potential of higher rates in the corrective maintenance business. Furthermore, the company should categorize the jobs from on-call business from a wider perspective by identifying also the most complex tasks where they can charge more. In addition, this increases the visibility to the central organization, which kind of services the company provides and how much. This might require new

procedures to the technicians and dispatchers but also new elements to the system they use. Furthermore, the information about the different work should be visible from the dispatchers all way to the customer invoice so that the customer can see which kind of work the company operates to their machine.

Because the exact value of the service is almost impossible to calculate, the company can utilize the different gross margins for different services in the beginning so that the higher value service generates more margin. However, the price of the different levels needs to be determined so that it is higher than the reference service as the company can create more value to the customer than their competitors can create, at least with their own products. In addition, the margin should be the same in the overtime than in normal hours as it usually generates also value to the customer, but there is no indication of why it should generate even more margin. Furthermore, the frontlines can have more complexity levels and overtime levels if they need, but it usually also increases the complexity of the model.

The other feature that has an impact on the prices is the urgent fee, which should be used if the company can be in the customer field within a specific time period, which could be, for example, in the same day or within 3 hours or something else depending on the market. The urgent fee could be, for example, a percentage that is added to the top of the hourly rates as the longer the work takes the more it requires rescheduling. However, the frontlines could decide how they want to charge the fee so that the customers accept it.

Frontlines should also form the fixed price packages for preventive maintenance if they do not have those yet. This should decrease the customer uncertainty of the prices and possibly increase the relationship with the customer, which makes the selling of services easier. In addition, the company could then utilize their effective and standardized way of working so that the company could have a competitive fixed price. In this light, the price difference to local competitors is not that high than in hourly rates.

Frontlines should also have the possibility to give discounts to some of the most important customers for getting more business in the future. However, the on-call business should also have a discount policy so that the discounts are given for a valid reason and the company should get the profit from somewhere else. However, frontlines should always be aware that the price is above the direct cost but in most of the cases above

average cost. The frontlines could, for example, evaluate the discount through CVP analysis, which was presented in the literature part. Thus, the customer should always generate more revenue for the company if the frontline gives discounts to them. However, it is important to note that discounts on preventive maintenance may lead to more revenue in corrective maintenance. In addition, the company can give discounts to the customer so that it does not need to pay the urgent fee, overtime or higher rate for more complex jobs. This might be needed especially in more competitive markets, where the other competitors do not charge those fees. However, the company should still communicate the value of these additional services to the customer even though they cannot or otherwise do not charge them.

As earlier stated, the company has a separate unit for the contract business in the central organization but does not have it into the on-call business. Because of the need to systematize the business of the global environment there is a clearly need for the global development of on-call business because as stated in the one interview, it is a different task to operate the business than to develop it. In addition to this, the deployment of the pricing model needs a team or at least a responsible person in the central organization. Furthermore, the company should not consider the on-call business and contract business as separate business areas but rather consider the whole maintenance business. Because of this, the contract management, operational excellence and pricing team should cooperate more in the central organization.

Some of the frontlines should also have more information about competitors' prices in the market but also be aware of competitors' capabilities of repairing the company's machines. This information is needed for setting the value-based price in different markets. Furthermore, there is a need for sharing the competitive information to the central organization, as it looks that the different employees in central have a different view on the competitive situation in the markets. In addition, it is noted in the one interview that the company should get more insight from the customer what are the factors why the customer chooses the company's services. This could be analyzed with the customer, for example, with conjoint analysis in the future.

Some of the frontlines, especially Finland and Belgium should also pay more attention to doing the cost calculation more accurately as the full service cost is calculated somehow on a too high level. With correct calculations, the frontlines can better see how much they should get from different customers to cover the cost and have a suitable margin. In addition, the frontlines could form the different cost centers based on the complexity of the work so that they could calculate the target price for the different works. However,

the objective for the future is that the company could price its work with a value-based method.

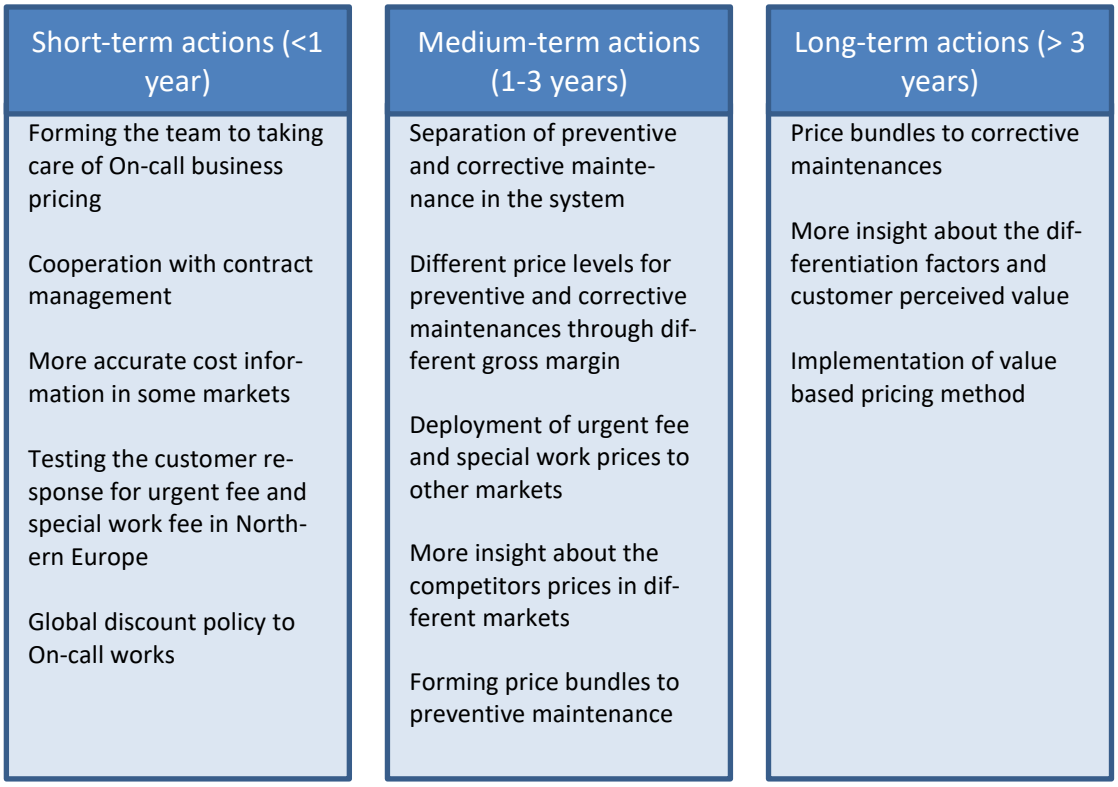

Figure 23. Recommendations to the company

6.2 Discussion

The main literature of the study was the literature of the value-based pricing and the value-based pricing processes, which this study utilizes. The pricing literature has emphasized that the pricing process is cyclic (Shipley and Jobber 2001) or linear (Hinterhuber 2004). However, the thesis suggests that the pricing model consists of two different branches, which are pricing determinant and market characteristics, which affect to the formulation of the pricing model.

The literature of the pricing process (Shipley and Jobber 2001, Hinterhuber 2004, Nagle 2011) have also emphasized that the pricing process should start from the objectives of pricing, which comes from the company's strategy and the market characteristics should be included in the analysis of key determinants. However, as the thesis concentrated the pricing of a global perspective, we argued that the actual pricing process should start with market characteristics because those have an impact on the objectives of pricing. The study also considers the strategical view of pricing process (e.g. Shipley and Jobber

2001) more broadly by adding consideration of different price strategies for services provided by Berry and Yadav (1996). In addition, the literature of pricing processes noted that strategy affect to objectives but have not noted that the broader strategy might also have an impact on the pricing objectives of different offering as we demonstrated in this study. Therefore, we concluded that in addition to pricing determinant, the companies should consider the business model, which include the strategy of pricing and objectives of this strategy. Therefore, we recommend that in addition to concentrate only to one element of the offering, which literature of pricing process have considered, there is a need to take other product and service elements into account when defining a business model.

The literature of the pricing processes (Shipley and Jobber 2001, Hinterhuber 2004) mainly consider the pricing of the product, but the study revealed that it could be partially used with services also. The study brings a new viewpoint to the literature of the pricing process by taking the service point of view into account. The challenge that this process cause to the pricing of service is that the service is always somehow unique, so the pricing of service may need categorization of the service for example to preventive and corrective maintenance as in this case. Therefore, it is more important to segment different service elements based on the value rather than the different customer, as the customer perceived value depends on their need, which changes constantly in the maintenance business. In addition, the intangible nature of the services brings the challenge to calculate the exact value-based prices as differentiation value is usually based on intangible factors. Thus, we concluded that the manufacturers should form the pricing structure with value-based pricing process rather than actual prices that pricing processes in literature provide. In addition, the pricing process should also consider to pricing policy, which is noted in Nagle's (2011) pricing pyramid but not in the pricing processes in the literature.

The thesis supplements also the literature of machine manufacturer's service business by including a pricing point of view to it, which is rarely studied in this field. The study demonstrated that pricing of maintenance has a significant effect on the profitability of the manufacturer's service business. The literature have previously concentrated lot of the structure of the pricing in terms of bundling and unbundling (e.g. Mathieu 2001) but does not give any recommendations to actual price setting. Therefore, the pricing process and model contributes to the study on how manufacturers increase profitability through industrial services. However, the study also takes a stand to the bundling and

unbundling discussion, but it recommends to have both of these with maintenance services because of a large variety of different maintenances.

The thesis is in line with Cavusgil's (1996) study as he studied that the nature of the industry in terms of competition have an impact on the prices of foreign markets. Similarly, where the service manager in Finland thought that they are able to increase prices, the service manager in Germany, for example, stated that they have to be cautious of the price increases because the customer might then change to another service provider. Therefore, the market characteristics seem also have an impact on the Diamantopoulos and Mathews's (1994) desired level of attainment of objectives as we demonstrated in the qualitative analysis.

The heterogeneity of different markets has also raised from the interviews as, for example, the service manager in Germany noted that the urgent fee does not fit their markets. This is line with the Cavusgil's (1996) and Hinterhuber's (2004) study as they noted that the one pricing structure does not fit in the all-local needs. In addition, Anderson and Narus (1995) point out, the customer may be reluctant to pay for services, which have previously been free of charge. This might be also the reason why the service manager in Germany thought that the customer would not pay more for urgent services. However, as Anderson and Narus (1995) mentioned, making the value visible to the customer even if the company does not charge it can be used as a price tactic, which also comes from the one interview.

As the interviews raise the issue that on-call should not be managed as a separate part of the maintenance business, it is somehow in line with the Dent's (1996) study, which noted that one-sided management accounting might lead to sub-optimizing local performance. For example, considering the contract business as separate may lead to trying to increase the contract prices, which might also decrease the sales of on-call business. Similarly, Suomala et al. (2011, p. 15) noted the customer may appreciate that the company provides low or not profitable services like contracts for driving the more profitable business like on-call and especially corrective maintenance. Furthermore, Lindholm et al. (2017) noted that developing a new service offering might need information from other service divisions, for example, in the contract division as well. Therefore, management accounting needs to take interactions of different units into account.

The study contributes to the Indounas' (2019) study as it is also noted in thesis that objectives of the pricing is also to retain the existing customer especially in Central Europe. One of the objectives of on-call business is to increase the service contracts. However, the reason for getting more contracts is also based on that these customers generate most of the revenue also in on-call business at least in Sweden. Therefore, in the end, the company's objective is to get more profit in long term, which is also mentioned in some of the interviews. This is line in the Diamantopoulos and Mathews' (1994) and Shipley and Jobber's (2001) study as they argued that overall all of the company's objectives lead to get more profit in the long-term.

The study demonstrates that the strategy of the pricing clearly affects the forming of the pricing model. The objective to increase the service contracts, which included in the relationship pricing strategy provided by Berry and Yadav (1996) lead to price the on-call business relative more expensive than contracts. In addition, Huber and Spinler (2014) emphasize that the pricing of full-service contracts should be on the right level related to on-call business so that it does not encourage the customer to use on-call business. This also seems to be true in the quantitative study that in Central Europe where the contract business seems to be more profitable the on-call business is relatively larger business. Thus, some of the interviewees suggest that on-call business should be more expensive than contracts to increase the contract business, which is also in line with the Michel's (2018) study. However, as Berry and Yadav (1996) noted, the company might use also several pricing strategies, such as bundled packages and service contracts, which included to relationship pricing strategy, but may also represent flat rate pricing, which included to satisfaction pricing strategy. Therefore, the strategy might also affect how to provide, for example, preventive maintenance to the customer.

The thesis also supports Anderson and Narus' (1995) study that companies have problems for charging of services because those are poorly designed. Although frontlines seem to have decent price getting capabilities, some of the frontlines have a very simple pricing structure, with no discounts, which does not give the flexibility to set different prices to different segments. Similarly, Berry and Yadav (1996) also noted that a too simple pricing model could not take the different needs of the customers into account. However, one of the main contributions that Anderson and Narus (1995) noted is the difficulty to assess the customer perceived value of services. The differentiations that a company has relating to the reference service, for example, wide network and capabilities depend on a case by case as every service is more or less unique so the actual

value is therefore hard to assess. In addition, this contributes to Calabrese and De Francesco's (2014) study that it is hard to define the value when it is based on the reduction of the customer's costs. Furthermore, even the determination of the value of reference offering might be challenging and therefore the exact economic value is very difficult to calculate.

Similarly than Shipley and Jobber (2001), we stated that the urgency of need would increase the customer's willingness to pay. Furthermore, the strong differentiation value, which, for example, special maintenances have, increase the customer total economic value and increase their willingness to pay (Shipley & Jobber 2001). However, where Shipley and Jobber (2001) argued that these factors decrease the price sensitivity of the customer, we stated that these factors affect to prices directly through the customer perceived value.

The different frontlines have different habits to calculate their cost, which is line with the Cruz et al. (2011) study where different local units can reshape the accounting practices to their local needs. However, as Lindholm et al. (2017) noted this could be a challenge for the global service provider as it is somehow challenging to the case company. The other challenge that Lindholm et al. (2017) noted was a lack of accounting information of different viewpoints. This is also a challenge to the case company because the invoicing data does not tell which kind of services the on-call business actually includes, which is needed for understanding the business. However, the cost calculations of the company hourly rates should not be used for setting the prices, so the management accounting does not work as an answer machine in the Burchell's (1980) framework but rather the learning machine because of the uncertainty of the effects of the pricing decision. Therefore, the role of cost calculations supports also Hinterhuber's (2004) study as the manufacturer can use CVP-analysis as a pricing policy for discounts.

The actual pricing model should be used as a framework that different sales units can modify to needs of their market. This supports to Cavusgil's (1996) suggestion that companies do not need to decide between centralized and decentralized pricing in the global context but they can rather give the global pricing principles to the local units, but allow some level of adjustment to the local needs. Similarly than Hinterhuber (2004), some of the interviewees emphasized also that salesforce such as dispatchers need to take the role of implementing the prices as they are in contact with the end customer.

The segmentation of the built model also supports the Ding's (2007) study to segment the service to the customer, which needs basic needs like preventive maintenance, risk coverage like corrective maintenances and contracts, and the highest quality services like special works or comprehensive service contracts. Similarly, Wolff et al. (2018) also separate the preventive maintenance from corrective maintenance. In addition, the price structure is in line with the Michlel's (2018) study as he stated that tasks, which are more difficult or complex, have to be charged slightly more. Furthermore, they stated that some of the elements should be priced very competitively, where others can bring profits (Michel, M. 2018). This is also in line with the pricing model of the thesis, as the preventive maintenance should be priced competitive when corrective maintenances and other special works bring the profits.

Shipley and Jobber (2001) and Wolff et al. (2018) noted the urgency of need could be used to segment the market. The pricing model that has been built in this thesis does not have clear segmentation, which depending on urgency of need, but the urgent fee works as a differentiator, which should automatically segment non-urgent and urgent need of the customer. Therefore, the discrimination of the pricing model is close to the way suggested by Ding (2007) where the different offerings have different prices but the prices are the same to different customers when the quantity is the same. Although Forbis and Mehta (1981) studied, which factors affect the customer perceived value of the product, the intensity of product usage also has impact on the value of the services. This is noted in the interviews that breakdown of machines that have a high utilization rate in the customer site lead significant cost to the customer, which then also increase their willingness to pay especially for urgent service.

Furthermore, the segmentation support Nagle's (2011) statement that segmentation should also take the cost of serving into account because urgent services require more administrative cost and complex tasks more training costs than normal services. Although the actual suggested pricing method is based on the value, it uses the gross margin to reflect it. This is line with the Guerreiro and Amaral's (2018) study as they noted that even the contribution margin could reflect the value so the method is not purely cost-based then. The actual method is close to Cavusgil's (1996) flexible cost-plus pricing or even dynamic incremental pricing where only the cost are mandatory to cover and the gross margin depends on the market situation.

The qualitative study also raises that some of the customers want a flat rate pricing to the works, because they want to be aware to the final cost. This is line with the Berry and

Yadav's (1996) and Michel's (2018) study where flat rate pricing decreases the uncertainty of cost to the customer and move the risk to the supplier side. Similarly, the risk that flat rate pricing brings to the case company is also noted in a few interviews. In addition, it is noted in the interview that the unanticipated costs will be covered if the volume is high enough so the unanticipated costs are also taken into account as Berry and Yadav (1996) noted.

The bundling in the case study can be seen also as a flat rate maintenance package or also the service contract as it includes the different services, which are bundled together. It is noted in the interviews that the contracts decrease the transaction cost of the customer and supplier. Similarly, Nagle (2011) noted that bundles decrease both customer's and supplier's transaction costs. In addition, it is noted in the interview that contract business increases the utilization of technicians and brings predictability. In addition, the same aspects are noted in Oliva and Kallenberg's (2003) and Gebauer et al. (2005) research. Furthermore, the thesis supports Berry and Yadav's (1996) study as they noted that the company benefits from the more steady and sustained interactions with long-term contracts. Moreover, the interviews bring out the issue that on-call business has much higher administration cost than contract business, which supports to Eppen et al. (1991) study, as they stated that unbundled services cost more because of the complexity of the management. The complexity of the management based on the case company's daily scheduling of unpredictable work.

The thesis also brings some points that are at variance to other studies. For example, Mathieu (2001) thinks that unbundling may be more common in a competitive mature market, but according to our interviews, the company should increase the bundling and productization of services. In addition, Northern Europe is stated to be more matured because the competition is not based on cost and the outsourcing of maintenance is more common. Therefore, according to interviews, customers in more mature markets are willing to outsource the maintenance to the supplier so that they are able to concentrate on their core business. Therefore, the customers in these markets are willing to have a long-term contract with a reliable partner. In addition, where Michel (2018) point out that the companies should not charge overtime, the study demonstrates that overtime also brings the value to the customer and therefore we recommend charging it.

Hinterhuber (2004) also suggest decreasing the price sensitivity by comparing the product to more value-added substitute. This is partially utilized also in the price model, as the reference product, especially for corrective maintenances, should not be the cheap

local competitors, but rather high priced global service providers. The other thing that the case company already do to decrease price sensitivity was getting close relationship with the customer, which Hinterhuber (2004) also noted to be one way to increase the switching cost to the customer. In addition, many interviewers emphasize the regular contact with the customer, which is needed to motivate the customer according to Brax (2005). Furthermore, as Hinterhuber (2004) noted, making the different kind of services like bundled packages or rates for special work make the comparison to other offerings more difficult, which also decreases price sensitivity. Moreover, it was noted in a few interviews that discussion of the availability that the company can provide to the machine if the customer uses company services usually increase their willingness to pay from it. This contributes to the argument from Hinterhuber (2004) that relating the offering to an important end benefit can decrease price sensitivity.

7. CONCLUSION

7.1 Objectives of the research

The first research question of the thesis was:

1. *Which factors affect the selection of a suitable pricing model for global machine maintenance service?*

Generally, the factors that affect the selection of a suitable pricing model are based on two different branches, which are market characteristics and pricing determinants. Market characteristics affect pricing objectives and pricing strategies, which together determine the business model of the maintenance business. In addition, pricing determinants include customer perceived value and costs.

Market characteristics include the potential of the market, the maturity of the market, the characteristics of the customers and the competition. Although the competition affects the customer perceived value it also seems to have an impact on the desired level of attainment of objectives, as more competitive markets seem to seek more satisficing than maximizing results. In addition, the different markets seem to have different preferences to perform the maintenance business, as some markets prefer more contract business when other markets prefer to order only in case of need. Furthermore, the competition might prevent or complicate to charge from the service elements when competitors provide those free of charge and increase the risk of losing the customer. Some of the bigger or more important customers may also require discounts from list prices or want fixed prices. Therefore, customer characteristics affect pricing structure but also the pricing policy for discounts.

The qualitative analysis raises that the business model how the company wants to pursue the maintenance business have an impact on the selection of the pricing model. The business model determines, which are the elements in the pricing model where the company can and wants to make a profit and where the company wants to engage the customer and increase market share. Therefore, the business model includes which pricing strategies the company wants to use and which are the objectives of different parts of the maintenance business. The company needs to consider does it want to increase the

relationship through long-term contracts and bundles or just be effective by cost reductions?

The main factor that should affect the pricing of maintenance work is the customer perceived value. The study demonstrates that it is very difficult to determine the exact value of the services because of the difficulty of determining the exact value of the reference offering and differentiation values. However, it is still possible to determine, is the reference value low or high depending does the customer use own workshop, local or global service provider. In addition, the differentiation factors generate a different amount of value in different services. The study demonstrates that customer perceived value depends, for example, on the urgency of need and the complexity of the work. These differences of the customer perceived value of different service elements need to be taken into account in the pricing model by forming the pricing structure, which takes these differences into account.

Another pricing determinant that has an impact on the selection of the pricing model is cost. The study illustrates that, for example, the cost of technician utilization, overtime, rescheduling, traveling, training, working outside the business hours, and problem-solving should be taken into account when pricing the maintenances. Although the cost calculations should not work as an answer machine, those set the price floor that the company has to cover with the price. Therefore, the costs affect, for example, discounting policy, how much the company can give discounts to important customers. Furthermore, the additional costs, such as to the administration of the service element might have an impact on the pricing model if those additional features also increase the perceived value of the customer. In addition, the different cost levels in different geographical locations between and inside the different regions usually affect the price of reference offerings and therefore have an impact on the total economic value to the customer. Moreover, the time of action like overtime affect the cost and the price, but the price is also based on the higher value some of the customers perceived from overtime.

Another research question of the thesis was:

2. *Which kind of pricing model can be utilized with the global pricing of maintenance service?*

The pricing model should be based on the objectives of the pricing and more widely the model, how the company wants to do the business. The model should not concentrate only on the part of the service but rather consider other service elements too in a way that it leads to the desired direction and not just sub-optimizes the part of the overall services. Therefore, the contract business should be priced more competitive than on-call business so that it encourages the customer to the relationship when on-call business brings profits. Furthermore, the model should be flexible so that it allows achieving different content and desire level of attainment of objectives depending on the market and the customer.

The structure of the pricing model should be based on the complexity of the work, the urgency of need and direct costs rather than the segmentation of different customers, as customer's needs change constantly. The pricing structure should have different prices to corrective and preventive maintenance because the study concluded that corrective maintenance generates more value to the customer through reference and differentiation value. In addition, the customer values the working in overtime and urgently when the customer has an urgent need. Therefore, the structure of the model is value-based. However, because of the complexity of setting the exact value-based prices, the pricing model can utilize the gross margin for reflecting the value. In this manner, the pricing model should take different customer segments into account with a dynamic pricing structure so that it offered different pricing to different customer segments based on, which kind of services they purchase.

The different markets have different characteristics, so the pricing model should give the framework to the sales units for setting the actual prices. Because the exact value-based price is hard to define to the services the framework ensures that the more value-based service elements are more expensive, but the sales units can determine how much more the market is willing to pay from those. In addition, sales units should have the possibility to give discounts from the standard prices for increasing customer relationships or if it leads to more revenue or other objectives of the company. However, the pricing model should also include the policy for discounts so that discounts always bring other benefits to the company. Furthermore, the sales units should have the responsibility to categorize different work to different price levels and justify the different price levels to the customer based on the value that they receive.

7.2 Limitations of the study

This study concentrated on only one case company, which operates in certain markets. Because of this, the suggestions may not be suitable for all the field service industries. The suitability of the model may depend, for example, on the maturity of the market, the competition in the market and the complexity of the product. In addition, the study has concentrated mainly on Northern and Central Europe, where the standard of living and cost level is generally high. Therefore, the low-cost levels and infrastructure in, for example, Asia or Africa might bring other challenges to the pricing model. In addition, the study does not consider cultural aspects so much, such as the meaning of discount in some markets.

The qualitative study uses the pricing process provided by the literature for forming the pricing model for the company. Although the pricing process is mainly intended for the pricing of products, it can be used to price services somehow. However, the intangible nature of services and the fact that every single service is different brings the challenge to determine and assess the differentiation values from the competitor's service. Therefore, this study does not calculate the exact prices or percentages for different services. Furthermore, the different customers and situations like the urgency of need affect the customer perceived value so it is also unpractical to calculate the total economic value in a case by case. Moreover, the model does not take a stand should the manufacturer charge the urgent fee with a fixed amount of percentage. In addition, this way of analysis does not take the product-service interaction clearly into account if it is not included in the objectives of the pricing.

The purpose of the study is to form the pricing model to the on-call business, but the contract business has also been taken into account for getting visibility to the overall maintenance business. Although the price level of the contract relate to the on-call business is taken into account, the actual pricing of contracts is not taken into account in the study. In addition to this, the study concentrated on the pricing of actual work and not takes, for example, pricing of travel, parts, and consumables into account. The reason for letting those outside the scope is that the company already has the procedure for pricing travel and parts.

As the study is done cross-sectional rather than longitudinal, the study does not reveal how the actual pricing model works and how the organization should maintain the pricing over time. Because of this, the study does not reveal does the pricing encourages the

customer to the contract business and does the urgent fees decrease the company's administrative cost.

7.3 Future research

The thesis points out a few possible future research fields. As one of the interviewees noted, one future research topic should relate the system point of view to the on-call or field service pricing. As the pricing of hourly rates in on-call business is a way different from the pricing of spare parts, it could be interesting to study which kind of system suits best to maintain the dynamic and value-based pricing of global maintenance work. In addition, it might be possible to study how the system can be used to help to sell of the on-call services to the customer.

As we noted earlier, the study does not take the pricing of contracts into account so the one possible future study could be how the maintenance contracts should be priced so that they indicate the customer perceived value. Furthermore, the topic relates to the pricing of customer maintenance management or the pricing of the information. Many of the companies can get important information from the machines, which can help the customer to order the maintenance before the machines in down. Thus, the info that the company provides to the customer is valuable and can be charged somehow.

The third possible future study can be an even wider perspective to the pricing of maintenance by taking also the pricing of the machines into account. The study could, for example, concentrate on how the company generates the profit with pricing within the product lifecycle. Should the companies, for example, sell the machine relatively cheaply for getting revenue from the maintenances? Furthermore, the study can study how the high-priced services have an impact on the sales of the machine through customer decision making.

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APPENDIX A: INTERVIEW QUESTIONS TO SERVICE MANAGERS IN FRONTLINES

Primary questions:

- What your job include, how it relate to on-call business pricing?
- Which kind of services on-call includes? How these are charged?
- Which kind people go to the field (technician, engineer, fitter)? Do they have different competencies (training and educations)? Have they charged differently?
- Do you have different prices for different machines or different job based on expertise? Do you see that it might be possible?
- How quick service technician usually come to the field? Always immediately or is there normal and urgent cases? Is the pricing same?
- How overtime is priced? Do you believe that customer value the work in overtime more than in regular hours?
- Why customer should choose the company for repairing their machines? What customer value and which they not value?
- Which are the key advantages that the company have against local and global competitors in on-call business?
- How much the price premium should be in relation to local competitors? (basic vs advanced service)
- What are the main reasons for price discounts? Which affect the size of the discounts?
- Do you often get complains from customer side that prices that prices are too high? How you justify and does it affect prices?
- Do you have any actions that will encourage customer to keep using company's services?
- What other factors affect prices?

Additional questions:

- How you use cost information in pricing?
- How competitors prices affect your pricing?
- Do you know how good competitors succeed to repair our machines?
- Do different customer have different needs?

APPENDIX B: INTERVIEW QUESTIONS TO OPERATION SIDE TO CENTRAL ORGANIZATION AND FRONTLINES

Primary questions:

- What your job include, how it relate to on-call business pricing?
- Which kind of services on-call includes? How these are charged?
- How much technicians or dispatcher could do before going to field? Do the company charge customer for example calls?
- Which kind people go to the field (technician, engineer, fitter)? Do they have different competencies (training and educations)? Have they charged differently?
- How quick service technician usually come to the field? Always immediately or is there normal and urgent cases? Is the pricing same?
- How we use installed base information, how we benefit from it?
- Why customer should choose the company for repairing their machine? Which thing they value ant which not?
- Which are the company's competitive advantages against local and global competitors in on-call business?
- Do you believe that customer value the work in overtime more than in regular hours?
- Do you have any actions that will encourage customer to keep using the company's services?
- Why some bigger customers have not interested about service contracts?
- How much the price premium should be in relation to local competitors? (basic vs advanced service)
- Is there any other factors that does affect or should affect pricing?

Additional questions:

- How the company ensure that it have very skillful technicians?
- How the company guarantee the quality to customer?
- Other market related aspects from frontlines for example discounting

APPENDIX C: INTERVIEW QUESTIONS TO CENTRAL PRICING

Primary questions:

- What your job include, how it relate to on-call business pricing?
- What are the objectives of pricing on-call in short and in long term (profit, market share, image)
- How we use installed base information in pricing? Is profitability measured through product life cycle?
- What you believe that are the main reasons for price discounts?
- Do you believe that customer value the work in overtime more than in regular hours?
- Why customer should choose the company for repairing their machine? Which thing they value ant which not?
- Which are the company's competitive advantages against local and global competitors in on-call business?
- How much the price premium should be in relation to local competitors? (basic vs advanced service)
- How price sensitives customer are in this market? Does a little price changes affect heavily to customer willingness to pay?
- Why some bigger customers have not interested about service contracts?
- Do you know what are the incentives frontlines have? (revenue or profit)
- Is there any other factors that does affect pricing?

Additional questions:

- Do we have any actions that will encourage customer to keep using our services?

APPENDIX D: INTERVIEW QUESTIONS TO SERVICE CONTRACT MANAGERS

Primary questions:

- What your job include, how it relate to on-call business pricing?
- What are the objectives of contract pricing in short and long term? (profit, market share, image)
- Is pricing of contracts operated in central organization or in frontlines?
- How you calculate contract price, which hour rates you use?
- What are the advantages that customer will get from contracts?
- Do you see that customer value that they can move their risk to us when providing contracts? Do you price the risk?
- Why customer should choose the company for repairing their machine? Which thing they value ant which not?
- Which are the company's competitive advantages against local and global competitors in repair and maintenance?
- Why some customer are reluctant to get service contract?
- Do you have any coordination with on-call pricing? Are prices in the same line so it encourage the customer to get contract?
- How you use installed base information, does it affect pricing of contract? Does different machines have different prices?
- Any other factors that affect the pricing in maintenance business?